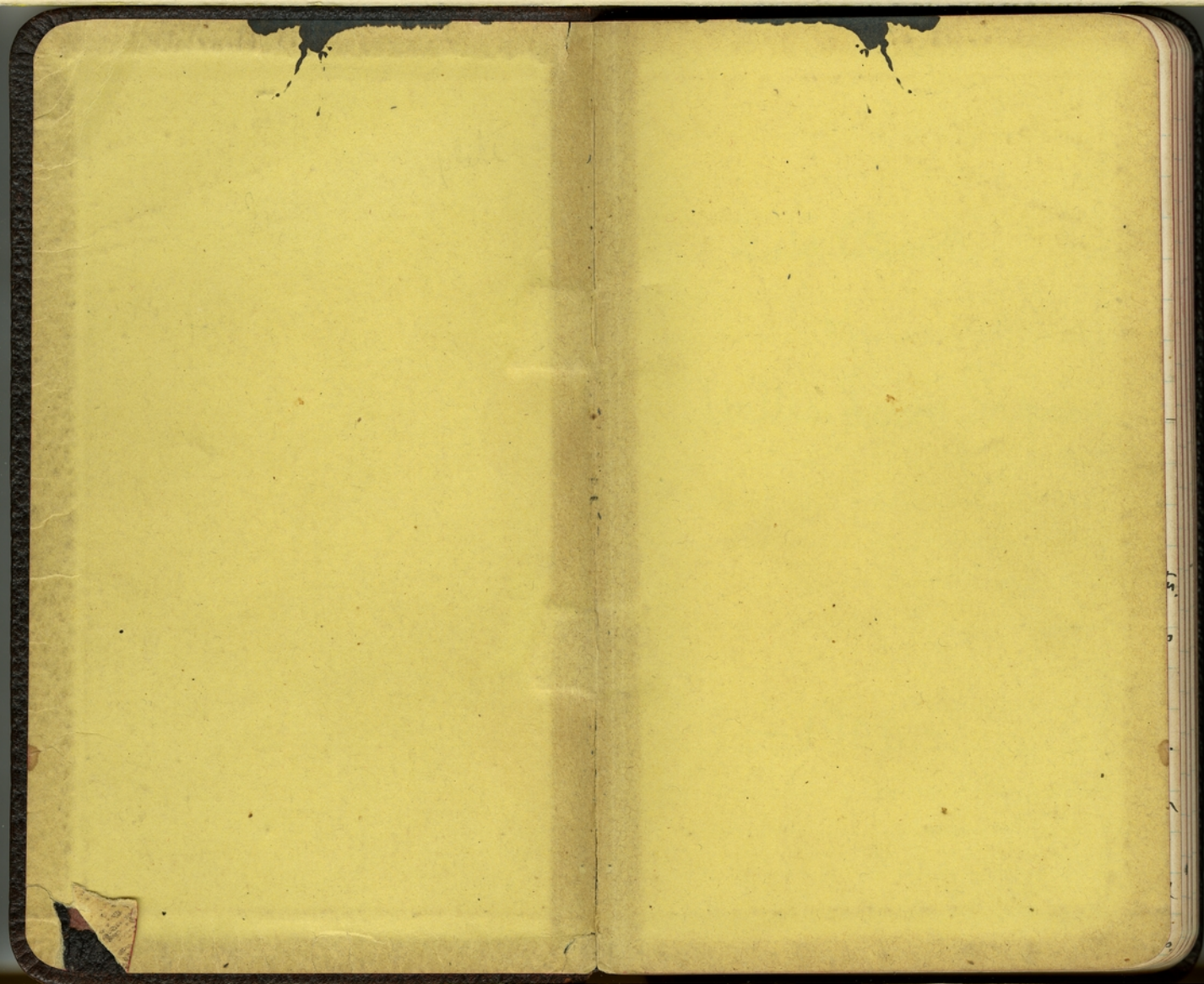




Field Book
of
Willis Linn Jepson.

- 1900 -

Berkeley

- *Platanus racemosa*. In S. Cal. the trunks always prostrate - at least about Claremont. - Universally called Sycamore. I never saw a tall erect tree - H.P. Chandler, Dec. 1899.

- Douglas Fir. Comes from Washington, L.E. Hunt, average $1\frac{3}{4}$ in. long. Longest I have from California = $3\frac{1}{2}$ in. long. Do not believe they will be found as long as Sargent indicates ^{*} except very rarely

* $2 - 4\frac{1}{2}$ in.

- *Picea* etc. Economic notes on cone-bearers of Alaska, See W.D. Gorman, Pitt. 3, 65-70.

1898

- Rain. Some trees like the Live Oak (*agrifolia*) seem to keep the ground dry beneath the tree in case of showers. cf. other trees.

The leaves of *Quercus agrifolia* were badly eaten off this year, the side hill south in Strawberry Cañon looked like an Eastern deciduous wood in winter - not a leaf on the tree. Some trees were not denuded. Most at this time (Dec. 6, 1898) are green with new growth as if it were spring. But that it is not the proper time for new shoots to come forth is evidenced by the north wind storm of the last few days. The wind has torn off the tender leaves and twigs and drifted them against the path sides, as if autumn leaves

Berkeley.

- *Ilex aquifolium* - free-seeding on Flood estate, Menlo Park. Also *Graecaria imbricata* and *brasilensis*. Seed must be kept moist in order to germinate.
- *Platanus racemosa*, material from Visalia, Woolsey, no seeds in the balls; the axes of the racemes with the vascular strands in separate threads, having been worked loose from the general stem tissue by wind! (Circa 1897.)
- *Pinus radiata*, cf. Wats. Proc. Am. Acad. X, 119 as to occurrence on Guadalupe Island.
- *Pinus* of California, Steele, Proc. Am. Pharm. Assoc. 1889, p. 234.

Inverness - Feb. 14, 1900

Pinus muricata - Bishop's Pine
 - this tree is the most interesting feature about Inverness; it engages the attention wherever one goes. The young trees are good to behold - they suggest young vigorous youths; they are so clean and healthy, so straight and symmetrical. The very old trees are the ones however which give picturesqueness to the country. The most picturesque ones are those with the flattened but thick tops, the very tall trunks either

with or without dead horizontally spreading branches below.

The most interesting feature to him who observes more narrowly are the cones which persist on the trees for so very many years and are finally forced off by the growth increase in diameter or gradually weather away. Cones on the trees, two years old are spreading horizontally, three being I notice, 3 in a whorl. When about 4 years old they are declined more or less and in extreme age are often quite deflexed.

Feb. 1900

There is a young and quite extensive forest covering the northern and northeasterly slopes ~~in~~ the hills, to be seen from the grade of the Point Reyes Lighthouse road just after it leaves Tomales Bay and on up to the summit (500 ft) of the grade. There must be a sq. mile of forest not mixed, but not continuous - a big patch here and there and a burned area between with clusters and lines of old trees scattered about or solitary.

A dead tree, leafless but with the clusters of dead

cones sticking over the branches presents a singular appearance.

The cones stick very tightly and it is some trouble to get them off.

A cone broken away by the botanists pick usually brings a chunk of the wood of the branch with it, for it either dead or alive.

The tree does not seem to shed anything willingly - even last years clusters of male cones are still on the trees.

The squirrels eat away the scales from many cones to get at the seeds. It is the gray squirrel.

Bishop Pine: - *Pinus muricata*.
Measurements at 4 ft.
from the ground.

No. 1. - 9 ft. — 40 ft. high.

" 2 - 8½" — 50 ft. "

(These two are trees with widespreading branches).

No. 500, *Pinus muricata* -
series of cones illustrating
variation in size & shape.

- Pine	Best.	}
Eucalyptus	next best.	
Gypss	third . .	

The woodmen who are now taking out trees on the grounds are privileged to sell the wood. Miss Madge Robinson thinks that the selection is influenced by the wood-choppers. - 2/12/1900. } trees to be cut
"Pine" = Monterey Pine.

Inverness.

No. 500a.

- 1 *Garrya flavescens* - No. 1 - ♀, elliptica ^{Dongl.}
 Pistillate fl. bracts opposite
 and decussate, each with
 3 fls. in the axil. Styles 2;
 ovules 2, pendulous, the ovary
 being 1-celled. - Inverness,
 Feb. 15, 1900.

No. 501.

- 1 *Sanicula arctopoides* H. & A.
 Pistillate flowers sessile,
 staminate pedicelled, the staminate
 more numerous in the head
 and more disposed toward
 margin but not altogether.
 Bractlets apparently in two
 circles but the larger are, some
 of them, 3-leaf, so making a
 circle of large bractlets and
 a circle of small bractlets,
 being cut so deep. See also 23 pp.
 ahead. = p. 33.

Feb. 1900.

No. 502.

- 1 *Ribes sanguineum* - No. 502.
^{var. glutinosum T. & G.}
 Some shrubs now in full fl.,
 others near by just budding!
 Petals narrowly obovate with
 a narrow but distinct claw. The
 ↑ Broad edges of the petals are
 minutely revolute. The petals,
 however, have the appearance
 of being flat, are indeed quite
 flat, and with the claw,
 give to my eye the sug-
 gestion of being slightly
 different from the shrubs
 at Berkeley. Petals white,
 turning deep pink-red. Calyx
 white-pink, turning pink-red.
 - Feb. 15, 1900. Inverness. The
 calyx-tube and ovary are both
 minutely pubescent and
 minutely capitate-glandular.

Inverness, Feb. 15, 1900

Tan-bark oak - common enough here but no large trees noted. Bark smooth, even, mottled white or light gray. The fissuring on the older trunks is very striking. It is not regular around the trunk but as if one had taken a knife and made a single long ^{or occasional} gash straight down a bark-bound trunk and the gaping fissure soon opened with the growth of the tree trunk:-

I notice similar gashes on trunks of small trees of *Quercus agrifolia* - Sometimes just one single gash, several feet long.

Inverness. Feb. 15, 1900

The following plants are in flower.

Cardamine oligosperma
Ceanothus thyrsiflorus Esch.
Vaccinium ovatum Ph.

Erigeron Canadensis

Rubus parviflorus (flower $1\frac{1}{4}$ to $1\frac{3}{4}$ in. broad).

Rubus ursinus - Common
 Blackberry.

Rhamnus Californicus $7\frac{1}{2}$ to 13 ft.

High; petals very small, triangular, opposite the stamens and enveloping them in the bud!

Oenothera ovata Nutt.

Pterostegia drymarioides

Dodecatheon Hendersonii - tetramerous corolla.

Inverness, Feb. 15, 1900

Sanicula laciniata - H. & A.

Heads 2 to 2 $\frac{3}{4}$ lines
broad; bractlets 9, lanceolate,
entire. Staminate flowers
pediceled and more
numerous than the
pistillate which are
mostly central and all
sessile.

Claytonia sibirica - sepals
ovate, obtusish; petals pale
pink with 5 longitudinal
dark pink lines; marginate
at apex; bracts ovate, the
large pair 1 $\frac{3}{4}$ in. long,
obovate, acute at each
end, the sides mostly
unequal; pedicels 1 in. long,
more or less.

Inverness, Feb. 15, 1900.

I note the following plants
as occurring - but not in fl.

Lotus glaber Greene.

Anaphalis margaritacea

Diplazium glutinosum

Heteromeles arbutifolia

Adenostoma fasciculatum -

Gaultheria Shallon Ph. H. & A.

Wax Berry

Madrone (*Arbutus menziesii*)

Baccharis pilularis - erect
and decumbent forms
grow side by side on the
"mesa" back of the cottages.

Castanea chrysophylla -

All of the above on this
page from grade to Light
house, after road leaves
Tomales Bay.

Inverness, Feb. 15, 1900.

- *Erodium cicutarium* - in fl.
- *Orthocarpus pusillus* - reddish brown patches just appearing by the roadsides

Rubus parviflorus - petals 10 lines long, broadly or somewhat rhomboidal ovate.

Tan bark Oak - $3\frac{1}{2}$ ft. diam!
on road in front of Lotus Land

Pinus muricata - crooked branching in tops of old trees, not crooked like an oak, but by angular branching: - gives the singularly picturesque effect.

Inverness, Feb. 15, 1900.

Alder - ^(*A. rubra*) - sap makes the bark and especially the wood red where cut. In one tree main branch from the base I count 42 rings. Greatest diam. 19 in.

^{columbian ~~Piper~~ ~~argata~~ Eastw.}
✓ 502A. *Arctostaphylos* - leaves steeped in hot water used as an external application or wash for the relief of Poisoning by Poison Oak. - Mrs. R. W. Wood, Inverness.

- *Garrya flavescens* - a staminate tree now in fl. grew very close to tide water, within 2 ft. See 500a. = *Garrya elliptica*.

Alder - more or less leaves persist all winter - these are

Inverness, Feb. 15, 1900

dead and dry but hang on very long. A willow divests itself of leaves thoroughly.

The bees are a glory and a delight everlasting. I have just collected on cone of pine which is at least 45 yrs old and still attached to the trunk.

And the alders. What beautiful clean limbs - all divested of leaves and shining white in the winter sun! And such laurels.

Yours for the green woods,
Willis L. Jepson.
Feb. 15, 1900.

Laurel at Inverness.

In many respects this is one of the most beautiful of California trees. Its foliage is evergreen and very thick. One cannot see through a laurel tree. Near Olema there are beeches in the rich valley soil which are very high. I have measurements of these in my card catalogue. It is of course common along streams but here at Inverness from the south slope of the "first valley" there is the most extraordinary sight to my eyes. I am familiar with the laurel as a boy. It grew

Inworness

in the Vaca Mountains -
 a thick roundish topped
 tree or bush 15 or 20 ft.
 high scattered along the cañon
 streams. But there on the
 north slope from the base
 to the top of the hill and
 a quarter of a mile long
 it forms a dense thicket.
 The whole top is close and
 even as if clipped. All done
 by the wind! Which howls
 in here from the mouth
 of Sonales Bay. Here and
 there one may see little nar-
 row rifts running up
 and down the hill just
 if erosion rivulets resulting
 from rain storms! In some
 places too you may see a

Feb. 15, 1900

clump cut off vertically,
 sharp and clean - as if
 with a scythe.

Down near the Shoemaker's
 house there are two trees
 standing out near the bay
 shore. They do not look in
 the least like hawels. The
 foliage is all in a thick
 flat top with bare branches
 below, the top on one
 side of the tree and
 pointing landward, away
 from the prevailing wind.
 Along the road, which
 follows the shore, you
 may see also old trees here
 and there with dead
 branches, and the whole
 trees bearing more or less lichen.

Inverness, Feb. 15, 1900.

Before reaching and after leaving Taylorville or Camp Taylor much Laurel is to be seen from the train.

Much has been cut out apparently but it evidently has a great disposition to sprout from the base being hard to kill. I should imagine and suggesting in its sprouting the redwood, the small circles of which one sees all through Marin.

The Laurel very frequently has tremendously large bases with many trunks arising from it. One circle has 21, the base 28 ft. 3 in. in total circumference. The original central trunk all rotted away.

Alder - *Alnus Oregona* ^{= rubra}

The alder here gives most pleasing variation to the scenery. Green hillsides, green with the thicket of evergreen trees and shrubs - leafless buckeyes about the brow of the hill, bare alders filling the bottoms of the cañons along the streams and in low wet mouths of the cañons expanding from single files to a little grove of trees. Here and there they are common on a moist hillside, but there is one large grove between Inverness post office and Inverness school. Across the creek

Inverness, Feb. 15, 1900
 from Inverness postoffice
 Mr. Martella, an Italian,
 has cut out a large alder.
 I was introduced to Mr.
 Martella and asked him
 for a section of the trunk.
 He generously offered to give
 me the log but I thought
 a thin section preferable.
 Mr. Martella would have
 cut the section 4 instead
 of 2 in. but I demurred.
 As he said: "It didna cost
 na more". He was delighted
 to please me and felt
 exceedingly happy that
 he had been privileged
 to give something to the
 University of California!

Buckeyes

Old buckeye trees renew
 themselves, curiously enough.
 In the first valley is a
 tree which must at one
 time have been gigantic
 judging from the stump
 which at the ground is
 25 ft around, about 6 ft.
 high, more or less hollow
 and $\frac{1}{2}$ gone above but
 about 12 or 13 ft around.
 It bears 23 new limbs,
 all about of a size and 4 to 6
 in. through, scattered over
 the stump top and down
 toward the ground on one
 side a few. There are even
 a few buds starting from
 near the base of the party

and much enlarged old stump base. The tree is about 25 ft. high.

No. 2 - 19 ft. - 26 ft. high

No. 3 - 23 ft. - 28 " "

No. 3 has a much more divided trunk with older branches and fewer branches.

No. 2 - trunk low and with a great hollow centre, the 24 new limbs forming something of a circle.

There are many other similar ones but smaller.

Tree 28 ft. high; trunk 18 before branching and almost erect! Most curious Buckeyes I ever saw! In front of "Islington Cottage"

Bishop Pine

Trees near Mrs. Woods' Cottage. These are tall and very straight (for the most part), averaging 60 to 75 or 80 ft. high. Measurements at 4 ft. from ground are as follows:

No. 1. - 8 1/2 in. - 75 ft. high.

No. 2 - 6 ft. 10 in. - 58 " "

No. 3 - 3 ft. 7 in.

No. 4 - 3 ft. 3 in.

No. 5 - 2 ft. 9 in.

No. 6 - 3 ft. 5 in.

No. 7. - 4 ft. 10 in.

No. 8 - 4 ft. 4 in.

No. 9. - 2 ft. 7 in.

No. 10 - 3 ft. 8 in.

No. 11 - 3 ft. 9 in.

No. 12 - 2 ft. 6 in.

No. 13 - 2 ft. 9 in.

No. 14 3 ft. 3 in.

[Cont. on next page but one]

Inwerness, Feb. 15, 1908

Fritillaria lanceolata - No. 502B

This is quite different from the Checker Lily about Berkeley. Perianth segments very deeply concave, green mottled above the base. Gland deep green, ovate-lanceolate, very sharply defined, placed in concavity in middle of segment but distinctly nearer base than apex. Flower 1 in. long, $\frac{1}{2}$ in broad.
↑ segments

Alder - *Alnus Oregona*.

Fine grove between Inwerness and Inwerness school: 500 or 600 yds. long; 50 yds wide; trees quite thick.

Cont. from prev. page but not

- No. 15 - 3 ft. 6 in.
- No. 16 - 2 ft. 2 in.
- No. 17 - 5 ft. 5 in.
- No. 18 - 2 ft. 7 in.
- No. 19 - 3 ft. 6 in.
- No. 20 - 2 ft. 11 in.
- No. 21 - 3 ft. 3 in.
- No. 22 - 3 ft. 7 in.
- No. 23 - 3 ft. 3 in.
- No. 24 - 2 ft. 7 in.
- No. 25 - 3 ft. 4 in.
- No. 26 - 4 ft. 2 in.
- No. 27 - 3 ft. 6 in.
- No. 28 - 2 ft. 2 in.
- No. 29 - 2 ft. 8 in.

area, 58 X 48 ft. In this area

Inverness, Feb. 16, 1900.

nothing but pines but
the grove as a whole
with oak, madrone and
tambark scattered
through it. Rather
open growth. Trees
ranging from 70 to
mostly 80 ft. high,
nos. 3 to 29 inclusive.
Trees with straight persistent
bunks.

Old trees seem to lose their
leader branch, often with
short very crooked-flexuous
effects to a flattish crown.
Trunks if branching low
down, branch at or within
1 or 2 ft. of the ground.

Marine Co.

Inverness, Feb. 16, 1900.

No. 503.

var. leptospermum

- *Ribes Menziesii* - No. 503
filaments distinctly
exserted; petals variable
as to apex, sometimes
distinctly ~~exserted~~ acute
sometimes almost
truncate. = ^{*R. subvestitum* H. & A.}
<sub>*R. leptospermum* Cov.,
mere forms of *Menziesii*.</sub>

- Alder; ^(*A. rubra*) stamens 4, or at
upper end of ament 3, in
a flower. Full-grown trees
mostly about 60 or 65 ft.
high. At 4 ft. from ground:

No. 1 - 8 ft. 6 in. - 55 ft. high

No. 2 - 5 ft. 6 in. - 60 " "

No. 3 - 3 ft. 6 in. - 65 " "

No. 4 - 5 ft. 9 in. - 60 " "

No. 5 - 4 ft. 7 in. - 60 " "

No. 6 - 8 ft. 9 in. - 50 " "

No. 7 - 4 ft. 3 in. - 75 " "

Mrs. Hamilton's Water Tank. - over -

Inverness, Feb. 16, 1906.

No. 3 is a very average
size.

Groves by woodchoppers
- large grove noted
previously - larger
trees averaging 2 ft. 6
in. to 3 ft. - about 45
to 50 ft. high.

Gaultheria ^{shallow} - Miss Wood says
it has white berries.

Rubus parviflorus - fls.
full 3 in. broad.

Baccharis pilularis -

Covers here as elsewhere
large areas on hill-tops
Dodecalheum Hendersonii -
all examined tetramers
throughout.

Inverness, Feb. 16, 1906.

Laurel -

copse on hillside at
Inverness - looks 4 or 5 ft.
high from opposite hill - trees
lowest on hillside 40 ft. high.
Higher up they decrease
to 25 ft. Trunks tall
and slender, averaging
3 in. in diameter with
a broom-like top. Higher
up, in clusters mostly,
the clusters mostly in
the form of circles.

Sanicula arctopoides - See No. 50/

In addition to my previous
note in this book I must
add that the large bractlets
are 8 or 9 and usually quite
distinct from the four or five small
ones; plant very common.

Inverness, Feb. 17, 1900.

Iris macrosiphon ^{Flora} No. 503 A.

Flowers about $1\frac{1}{2}$ in. broad.
Stipe $1\frac{1}{2}$ in. long. Ovary
1 in. long. Tube 5 lines long.
Flowers of violet or
paler shades of lilac.
Sepals variegated over the
whitish centre - This seems to
be *I. douglasiana* Herbert. - Jan. 17.

Viola adunca -

lateral petals bearded
strongly on upper side at
base, at the oblique
angle. Upper pair with
a slight tuft in the
middle at base. - Open
hillsides. Tuft of hairs white.

Alnus - No. 504 - ^{oregona} ~~A. rubra~~ Bong.
See p. 31.

Inverness - Feb. 17, 1900.

Not in fl.

Acaena trifida.

Sherarckium lanatum Michx.
Madrone - tall tree 35 ft. high.

Rumex acetosella

Caprifolium hispidulum var.
californicum.

The Point Reyes peninsula is
a most delightful country. Bot-
anically it has an interest
for me at all seasons -
especially on account of
the great variety of trees
and shrubs, their occurrence
and, so frequently, singular
form. Olema is a little
village set down in the hills
on the line of the narrowest
part of the peninsula.

Inverness, Feb. 17, 1900

Marin Co - said to have
heaviest rainfall of any
county in Calif. Frogs in
early summer. Birds in
summer; less birds in
winter.

A. rubra.

Alders on the beach -

large trees - tide water
reaches very near their bases

Quercus agrifolia - bark
thick, the texture peculiar,
splits off in chunks as if
brittle like taffy. Perhaps
this the reason of the
peculiar fissuring. Compare
bark of *Quercus wislizenii*

Fritillaria lanceolata -

flowers 2 or 3 on a stalk,
1 1/4 in. long.

Inverness - Feb. 1900.

Mar. 17,

Fragaria californica

Rubus ursinus

Salmon Berry - shrubs 5
to 8 ft. high. Petals broadly
ovate, obtuse, 1/2 in. long.

Stems very prickly, the
prickles stoutish, short.

Canes tall and straight
and very prickly.

Flowers 3/4 to nearly 1 in. broad.

Inverness - Feb. 18, 1900

Last night it rained; this morning everything was so glad and fresh, that we went for a walk to Second Valley. There is a magnificent display of Alder trees along the stream, some being 80 ft. high. My specimens are from Second Valley. (*A. rubra*).

Stamens 4, sometimes or rarely 3, very variable in shape. Trunks very white and tall, being unbranched up to 40, 50 and 60 ft.

Inverness, Feb. 18, 1900.

Inverness is about 4 miles from Point Reyes station. At Point Reyes station there is a good hotel.

-
- *Calycanthus occidentalis*, called "Wine Flower" in Sonoma Co; also called Spice Bush.
 - J. B. Davy, about 1901.
-

Berkeley.

- *Verbascum Blattaria*, occurs at Sausalito, Tuolumne Co., acc. Chas. Lysen. (1899)
Spms. ⁽¹⁸⁹⁹⁾ seen in his herb. fls. yellow. He says it occurs also at Sutter Creek, with white fls. - Feb. 23, 1900

Lysen also says: *Platystemon californicus* closes of a night; *Platystemon Torreyi* does not.

St. Helena, March 7, 1900

A great storm has been
been blowing and broke over
the country today and especially
toward evening; the flooded
country was a great sight.
I like to be in the country
when it is storming. One
appreciates the rush of the
wind and force of the
elements and associate
them with the mountains.

St. Helena, March 8, 1900

Today is what painters
call a gray day, what I
should call a brown day.
How wonderfully on such
a day the colors come out!
Today is a day of the
rejuvenescence of the
oak trees. What a spectacle

St. Helena, Mar. 7, 1900.

they are - the bare brown
branches of winter are
suddenly transformed. But
a few days ago they had
all the aspect of death,
brown, lifeless twigs. Now
every twig is tender with
young colors. The whole
tree is very very different,
both in color and in an
indefinable sense of softness.
The greens at first are so
light that the color might
better be termed yellow. Shades
of yellow and tender green.
Great round-headed oak
trees, 30, 40 or 50 ft. high
and often broader than
high, the whole tree on
account of its young color

St. Helena, Mar. 7, 1900.

is suffused with light that is so very soft.

The Black Oak (*Quercus Kelloggii*) starts much ahead of the Valley Oak. It is now quite well advanced and its stringy aments are hanging all over a tree in Mr. D.O. Hunt's yard. Stamens in a flower 5 to 7.

St. Helena, March 8

Kellogg Black Oak - young leaves with long tender spines which are apparently as long as the spines or prickles of the old leaves. Some old autumn leaves lying on the ground do not show longer spines. The

St. Helena, Mar. 8, 1900

young leaves are wine-colored: not so strikingly so, I think, as on the mountain tops. I measure young growth that is now 6 in. (or rather new) long. The aments are about 4 in. long. In some individuals they give to the tree a pronounced reddish aspect, even before the leaves have expanded much. Styles 3. Pistils frequently 2 or 3 in an axil or in a somewhat peduncled cluster. Foliage has a shining appearance even on the youngest-leaved trees and the bright surface is marked on the trees with the largest leaves. Aments $2\frac{1}{2}$ to 5 in. long. Perianth synphyllous, its segments broad. Filaments 1 to nearly 2 lines long.

St. Helena, Mar. 8.

Valley Oak - *Quercus lobata*.

Stamens in a flower 5 or 9.

Young leaves without points.

Prianth segments distinct,
very slender, linear. Bark
deeply fissured longitudinally
into rectangular or long
narrow plates.

Kellogg Oak - bark compa-
ratively smooth and even,
checkered somewhat into
roundish areas.

Valley Oak - leaves not lustrous

but yellowish.

No. 505 - *Navarretia viscidula* (Gates, Cany. 5-27-1900)

No. 505 - *Quercus californica*

Willow - in Mr. D. O. Hunt's
pasture lot - 60 to 65 ft. high,
13 ft. 6 in. at 4 ft. from the
ground: = *Salix lasiandra* (?),
leaves obovate, no stipules, no
glands. - No. 506. *Salix lasiandra* Phil.

St. Helena, Mar. 8, 1900.

Madroño - in fl. 3 lines long,
truncate base, with 10 ^{↑ corolla} nectaries
at base, and on the margin
of the corolla, appearing
from the outside like
transparent areas projecting
downward slightly below the
base of the corolla at point
of insertion on the pedicel.
Filaments woolly at the
swollen base.

Trip to Howell Mt. Mar. 9.

It seems to me, this wonderful
sunny afternoon, as if I never
saw anything so beautiful
as the yellowish-reddish
green great round heads of
the Kellogg Oaks. The "yellowish"
is of the leaves; the "reddish"
is of the aments. Really

Howell Mt., Mar 9, 1900.

there is no green in it, that is why it contrasts so beautifully with the dark green of the evergreen hillsides behind the tree and the green of the open grassy hillsides. It is a reddish and very light yellow; surely there is very little green in it, anyway, if any.
(Tree near Ed. Howell's place)

No. 507 - *Aristolochia californica*
Near Stone bridge - flowering profusely - corolla $1\frac{1}{4}$ in. long, greenish, purple veined. Broad purple band at base inside but not indicated from outside

Howell Mt. Mar. 9, 1900.

No. 508.

Gracilis ^{*latifolia* Benth.} ~~*origana*~~ ^{T Nutt.} male clusters

are just bursting from their winter buds. The cluster of stamens looks something like the crowded cluster of a Castor Bean plant. Calyx- rim very short and truncate, almost none, 2 or 3 or 1 stamen to a flower, but mostly 2, and sometimes 3.

Flowers in a closely branched panicle - No. 508.

No. 509. *Plagiobothrys tenellus* ^{Gray} and the erect " with it - both hairy below the crests in the throat.

These crests are right at the mouth of the throat. First sp. corolla $1\frac{1}{4}$ to $2\frac{1}{2}$ lines broad. Second sp. $3\frac{1}{2}$ lines broad to 4 lines. - No. 510. *Plagiobothrys* ^{Gray} ~~*nothofulvus*~~

= Napa Range.

Howell Mountain Road - Mar. 9, 1900.

In flower.

Brodiaea capitata - 10 lines
long perianth*Cercodanum intricatum*
bractlets 5, lanceolate, acuminate*Pedicularis densiflora* Benth.*Castilleja foliolosa*

Howell Mountain.

Delphinium ^{petals} *modicaule*Upper ^{petals} narrowly obovate.

sharply notched at summit.

Lateral petals very small, left.

Athyrium pusillus.Madrone - in full fl. but
making scarcely any
show; the tree is in
gala dress really, only
in the autumn or from
August to September or
November.

Angwin's Resort - Mar. 10, 1900.

Distribution of the Redwood.
Runs down on both roads into
Pope Valley; one road half-way
down, the other road quite
to the edge of the valley
but not on valley level.Southward along the range
it does not go beyond the
Dado ranch or Morris Ranch.The redwoods are mostly
on the eastern slope of the
range according to Lawrence
Angwin; and have been
cut almost entirely. Those
one sees from the road
are saplings from old
stumps. In inaccessible
canyons there are still a
few redwoods 3, 4, and
possibly 5 ft. in diameter.

Howell Mt. Mar. 10, 1900.

Such are to be found on the morbid place down toward Pope Valley; also on the Wells Fargo place in the other direction from Angwin - Southeastward along the range. All this information I have from

Lawrence Angwin, from a Humboldt woodsman Mr.

Blows, and from a St. Helena blacksmith. This group on the hotel porch at Angwin's Howell Mountain Resort gave me all they knew. The woodsman Blows spoke about fine specimens of the Redwood being flat

Howell Mt. Mar. 10, 1900.

on one side. Great trunks, after the bark was taken off, looked as if they had been sawed off on one side, so flat and slab were they. When this occurs it is mostly toward the base or altogether I understand, and not high up. One gets curious notes traveling about. Last night in the parlor a lady guest told me of a pine board which a gentleman in Sierra showed her which was most curiously marked in patterns. It was said by the owner to be the work of an insect and such pines could be found in Oregon and located

Howell Mountain, Mar 10, '00

in advance of cutting them. Inquiry developed that the figures went clean through the board as if stained and not as if eaten by an insect. The fibre or grain was not at all injured. I never before heard of this. The figures were crescent or moon-shaped, etc.

Sugar Pine on Howell Mt.

Two or three years ago I was told by someone in St. Helena that a long time ago there had been Sugar Pine on Howell Mountain but that the few trees had been cut out in early days. Mr.

Howell Mt. Mar. 10, 1900.

Angwin, Soc., says that he never knew of the existence of Sugar Pine here. He has lived on the mountain 25 years. There are three old sawmills or ruins. One down toward Pope Valley, one in the cañon at the head of Conn Valley, and another which I did not locate. These sawmills were probably put in, in an early day. At least one was doubtless here ^{long} before Mr. Angwin's time. If so, the Sugar Pine trees would have been the first trees to be cut, their timber being so valuable and so easily worked. They

Howell Mt., Mar. 10, 1900.

tell me at Angwin's that if anyone knows about this matter, Ed. Howell does. His grandfather first lived on the mountain and was the original Old Man of the Mountain.

Madrone trees, slightly wide-spreading ones, 30 to 35 ft. high.

Nature is very pleasing this quiet fresh sunny morning on the mountain. I say quiet but there is the subdued roar of the stream hastening downward as if it ought to

Howell Mt. Mar. 10, 1900.

late. The chuck, chuck of the wood pecker, the squirrel bark - and such-like woodland sounds.

Miss Watts, whom I met in the Hotel parlor last evening, remarked the fragrance of fig wood. I have often noticed the fragrance of the leafy tree but not of the wood. Miss Watts is a Canadian.

They call it 8 miles from Angwin's to St. Helena.

Pseudotsuga menziesii (Mirb.) Franco
No. 511 - Douglas Spruce, invariably called Fir in the country, is now in flower. Staminate inflorescence 6 or 7 lines long, anther cells to each stalk 2.

Howell Mountain, Mar. 10.

There is a little new growth
Yellow Pine but it is
mostly Douglas Spruce.

Quercus wislizeni - I note
trunks here fissured as those
at Inverness (see preceding pp.)
The bark chafes off in the
same way, under the point
of my pick, as if it were
chocolate candy. It is of a
dark reddish-brown color.

Sanicula tuberosa in fl., very
strong odor, somewhat spicy
but ^{very} penetrating; bractlets
shorter than the flowers,
some (the larger) 3-toothed at
apex.

Howell Mt. Mar. 10, 1900.

No. 512 - *Viola* ^{*quercetorum* B. & C.}
~~*purpurea* Nutt.~~

Leaves from almost round
to narrowly ovate, ^{obtus. or} pointed
at apex. Flowers bright yellow;
lower petal twice or almost
twice as broad as the
others, ^{or slightly retuse,} truncate,
alone by itself, the other
4 turned upward. While
this bilabiation is not
remarkably strong it is
marked compared with the
next. Lateral petals with
a short bearded spot
near the base - "at the throat",
also with 3 longitudinal
purple lines at base, the
lower petal with 6 of these.
Upper petals with purple
on outside. Stigma clavate

Howell Mt., Mar. 10, '00.

or globose at summit, on upper side with a line of short hairs, on lower side with a small circular opening with ^{slightly} raised border. Two upper petals turned back partly or almost wholly cover each other. Stems from a strong descending tap-root with fibrous branches.

No. 513 - *Viola lobata* Bth.

Leaves pedately 3 to 5-parted or -divided. Stems and leaves from a short rootstock bearing many fleshy fibrous white roots. Flowers similar to the preceding but scarcely bilabiate, lower petal little if at all

Howell Mt. Mar. 10, 1900.

larger than others, sometimes truncate but more often somewhat pointed and always spiculate. Upper petals purplish on back; lateral ones bearded similarly. Stigma a circular opening with a more distinctly raised border than in the preceding. Lateral & lower petals longitudinally purple-lined at base, the lines more frequently branched at apex.

Of the first species, I should say again that it was ^{*V. purpurea*} very strikingly bilabiate, the two upper petals often quite covering each other. In the second species the lateral petals spread laterally.

No. 513a. *Viola lobata* Bth. var. *integrifolia* Wats.

Howell Mt., Mar. 10, 1900.

No. 514 - *Claytonia spathulata* Dougl.Plants forming low clumps
1 to 2½ in. high broader.Leaves semi-terete or
almost terete; whole

plant very glaucous

Involucral leaves similar
to radical, scarcely connateat base. Petals somewhat
quadrangular, retuse at
apex, very light pink,
with darker pink
markings at base of blade.Petals clawed, rotately
spreading above the claw.

Corolla 4 lines broad.

Pedicels deflexed after
flowering. Common, very
abundant in the rocky
soil of a vineyard.

Howell Mt. Mar. 10, 1900.

Redwood.

Mr. Blows remarked about
the tall thick redwood
simply resting on the
surface of the ground -
having no tap-roots. Then
to make vivid his point
he told about the trees
swaying in the wind,
back and forth, and the
engine on a Mad River
log road waiting a chance
to dash by. The blacksmith
contrasted the Digger Pine
which, he said, had a
tremendous tap root. A
stump cut off at 2 or 3
ft. can however in 2
years be kicked over with
the foot, the wood rots so

Howell Mt. Mar. 10, 1900.

quickly! And yet the root seems as deep and as strong in the first place as the tree itself is high and strong.

Douglas Spruces - branchlets mostly drooping; so much so that the tree is given a positive character.

Yellow Pine - southward on Howell Mountain - young growth abundant! This is a retraction of a previous statement. How very Sierran it looks here. The long smooth slightly gravelly and reddish road winding along the nearly even plateau or ridge.

Yellow Pine on Howell Mt.

Diag. at 4 ft. Height estim.

No. 1 - 13 ft.	-	100 ft. high
No. 2 - 11 ft. 11 in.	-	90 ft. high
No. 3 - 12 ft. 11 in.	-	80 ft. high
No. 4 - 10 ft. 1 in.	-	85 ft. high
No. 5 - 10 ft. 1/2 in.	-	85 ft. high
No. 6 - 10 ft. 3 in.	-	95 ft. high
No. 7 - 10 ft. 7 in.	-	70 ft. high
No. 8 - 15 ft. 1 in.	-	95 ft. high
No. 9 - 7 ft. 8 in.	-	75 ft. high
No. 10 - 5 ft. 10 in.	-	70 ft. high
No. 11 - 11 ft. 11 in.	-	90 ft. high

Followed road to left of winery and made a circuit over plateau coming out at same point. I think I did not get as far south as when I drove over the route with my sister since I did not find so extensive a forest although as large individuals were found.

Howell Mt. Mar. 10, 1900.

Valerianella - No. 515

Spur shorter than the
ovary, about $\frac{1}{2}$ length
of corolla; corolla
pinkish - Near Island House

A. rhombifolia

The Alders, all bare-limbed,
mark very clearly the
line of Corn Creek from
Angwin's Meadows down
over La Jota Plateau into
Corn Cañon. The trees are
large, 25 to 38 ft. high,
and about the color and
aspect of the trees
in the cañon at

Berkeley; color of bark about
the same. Only young
trees have straight
branchlets in their tops.

Howell Mt. Mar. 10, 1900.

Douglas Spruce stump on
the plateau about 2 mi.
from Angwin, 15 ft. diam.
around at $4\frac{1}{2}$ ft. from
ground

Another one, 15 ft. diam. at
4 ft. - 73 ft. high. The
fire seems to blacken
Douglas Spruce stumps
more frequently than it
does Yellow Pine.

Here on the mountain
are characteristic adust
stumps - great deep fissures
& high ridges of very thick
bark.

No. 516 - *Iris macrosiphon* Torr.

Subt. longer than bracts, about as
long as flower; ^{or perianth} ovary pedicelled.

Howell Mt., Mar. 10, 1900.

Young pines of whatever species look much alike, they are vigorous, bright, roundish and thoroughly symmetrical. Compare the young Bishop Pines with young Yellow Pines or even young Sugar Pines. They are always bright foliaged and healthy.

No. 57. *Peucedanum macrocarpum* Nutt? = *P. dasy-carpum* T. & G.
var. *medium* Jepson.
Bractlets more or less united into a 1-sided involucre. - New Eden to Crystal Springs.

Umbellularia shrubs and clumps are a very conspicuous part

Howell Mt. Mar. 10, 1900.

of the chaparral between the Island House and the Crystal Springs. The clumps retain very decidedly the fern nature of the chaparral. The hillsides here are typical of the chaparral, rocky & dry.

- Maple - California M. - fine cluster of 8 trunks near bridge across Napa River on road to Sanitarium; 45 ft. high. (*Acer macrophyllum*)

I run across a wise bit in a newspaper which I transcribe: Feeble natures live in their sorrows, instead of converting them into apothegms of experience. They ^{are} saturated

Howell Mt., Mar. 10, 1902.

with them and they consume themselves by sinking back each day into the misfortunes of the past. To forget is the great secret of strong and creative natures - to forget often the manner of Nature, which knows no past, and begins again every hour the mysteries of her indefatigable productivity. - Balzac.

So far as I have observed the Cottonwood is not found in Napa Valley.

Little Oak, May 13, 1900

This is the full high tide of the year in this place for extravagant beauty. The plums & prunes are in full bloom, pure white dreams of blossoms, giving to the country at a little distance the effect of a snow-fall.

I walked into the town for the sake of enjoying the country. Calandrinia is so abundant this year in the orchards that the flush of red-purple color is in wondrous contrast to the heavy-laden blooming trees raising their ^{white-} heads above. How

Little Oak, May 14, 1900.

swart, how enticing
Bygone belief are now
The country lanes!

May 14, 1900

A clear perfectly quiet
morning. Birds singing
in the trees and
larks in the fields
pouring forth clear
rivulets of joyous sound.

The Araguipa Hills are
painted with a delicate
even newborn green. The
oaks on them are showing
various shades of yellow
and of green. But the
Buckeyes! In what marked
contrast are they with

Little Oak, May 14, 1900.

their round heads. Their green
is drawn from the tubercle
of dark green right at
the beginning. They do
not grow in color; their
richest color is donned
at once for their season
of joy is short, from
now until middle summer
- then their leaves begin
to wither and fall, and
early in the autumn
we behold them quite
leafless.

The heavy rain of last
week damaged the apricots
very much they are saying.
But perhaps you may not
have to thin I suggested
to Mr. Marshall. Ah, yes,

Little Oak, Mar. 14, 1900.

Said he, when I am asked how to thin peaches I reply: Pick off all that you can see, and there will be enough left at picking time.

Last night at sunset the northern sky beyond Rocky and the eastern sky were flushed with pink. Standing in the lanes the plum, white-laden, stood out against the pink sky. For color of delicate and tender hues this afternoon has been wonderful.

Little Oak, Mar. 14, 1900.

The Arapupa Hills, just at this time, please my eye. The green is not easy to describe; it is ^{so} young, so even and smooth. It has been worked into the texture of the earth so well. It is as if the earth or soil were green. On these smooth slopes are oaks of various yellowish, or greenish or brownish shades at this time, scattered about singly, in twos or threes or considerable clusters. I could not possibly have arranged them one-fifth so beautifully if I had planted them there myself. They suggest mystery in their

Little Oak, Mar. 14, 1900.

thicker parts; they invite
repose and their more
open sunny parts; their
shade gives thought of
dreamy restful places
And all about the bases
of the hills, not in the
valley but on the hem
of the garment of the
hill are the fine buckeye
clusters, here and there
occasionally assailing the
hill. They array themselves
at once in the full pride
of their ^{dark} green mantles.
The oaks grow into their
full shades as the season
advances but the buckeye's
best colors come out at once
and fade as the seasons
pass.

Little Oak, March 14, 1900

This is an unusually forward
year for growing things.
My father says he has
never before seen so much
vegetation at this time. An
old lady in Upper Vaca
Valley says the grass has
never been so high on Mar. 1.
She has lived here since
1852. *Capsella bursa-pastoris*
is 3 ft. high and Mallows
4 and 5 ft. high.

- Monterey Cypress. The last tree in the
garden at Little Oak is dead. All the
trees in the old college lot at Vacaville
are dead*. The trees at Little Oak were killed
by a borer which worked in the bark
and a short distance into the wood.
Mr. Fry of Elmira says that he saved
his trees by boring holes in the trunk,
filling with coal-oil and putting plugs
in the holes. — Mar. 14, 1900.
*save one

Little Oak, Mar. 14, 1900.

Cottonwood - Big Trees in
Flamo Creek just above
Mr. Foree's place. 12 ft in
circumference, 55 or 60
ft. high; crown 60 ft.
broad. Aments with
withered or fresh stigmas
hanging thickly all
over the tree. Foliage
starting. Stigmas 3 or
4; of either number in
the same ament, and fls.
about equally divided as
to 3's or 4's. - No 518 ✓

Boys' hard play tree!! - Feb. 1907.

Populus tremontii Wats.

- *Orthocarpus virianthus*, corolla
1 in. long; sacs broader than
high. Upper lip subulate,
purple; sacs sulphur-yellow.
No specimens taken.

Little Oak, Mar. 14, 1900.

Amsinckia ^{intermedia F&M. det. Fran. Chisaki}
^{Seaglassiana A.D.C. Oct. McBride.}
No 519. Bank of Alamo Creek - very
fleshy, often branching freely.
Hairs white; calyx with
whitish hairs; corolla tube
little surpassing the calyx;
corolla limb rather small.
Young achenes show
very roughish backs.

Very leafy up to and about
the close cluster of ^{short} spikes, or
rather undeveloped spikes, since
the plant is so young as to
be in the flowering stage.

Japson's Ranch - No. 544.

Corolla tube not longer
than sepals. Corolla funnel-
form with open throat. Two
reddish dots on upper side
of corolla limb. (All which I find
thus far has sepals as long or longer than tube.)

Little Oak, Mar. 14, 1900

In fl:

Cerastium viscosum.

Lupinus nanus - banks
and hill slopes.

Brodiaea capitata - Araquipa

Tellima affinis - fls 6 or 7 lines broad.
each petal 3-cleft at apex.

Saxifraga californica - petals
roundish, with a small
but distinct notch at apex; anthers
red - Araquipa Hills.

The Hazel is not found
in the Inner North Coast
Range

Ranunculus californicus,
Araquipa Hills, in fl.

Dodecatheon Hendersonii -
fls 4-merous - make
provision for this in Key.

Vacaville.

ciliata (R. & P.) DC. var

✓ *Calandrinia Menziesii* - No. 520

No. of stamens:

10, 12, 12, 12, 13, 13,

8, 9, 11, 11, 7, 10,

10, 12, 10, 12, 13, 13,

7, 8.

Plants growing in the same
square-foot of soil have calyces
glabrous and calyces slightly
ciliate on back (midnerve) and
on margin toward base. On
the same plant even, midnerve
may be ciliate, scabrous or
glabrous, or the margins
of the sepals ciliate and
not the midnerve.

Little Oak, Mar. 14, 1900.

Astragalus

Peduncles $1\frac{1}{2}$ to 2 in. long.
Flowers 4 or 5 lines long.
Banner wings white, except
the purple base. Perhaps
better: corolla purple at
base, the banner and
wings mostly white,
or purplish tinged or
rimed. Keel purple, little
more than $\frac{1}{2}$ as long as
the wings. Leaflets 9 to 15.
Alt. R. - no spms. taken.

Lepidium

Upper leaves ciliate towards
base; all linear (narrowly).
- No 521

Allium - No. 522. *A. serotinum* Wats.
Bracts 2 or 3; inner perianth segments
 $\frac{1}{2}$ as wide as outer; each ovary cell with
2 crests or lobes on back.

Little Oak, Mar. 14, 1900.

Larix platyphloea

Idly-Tip. Rays white-
tipped. Leaves 5 in. long
or less, narrow, (2 to 4
lines wide), above
somewhat slightly lobed
or gash-toothed.

Bracts of the involucre
enclosing the achene by
infolding, the margin
of the slightly enlarged
base of the bract bristly
or scabrous-hispid.

Trifolium

Down-Clover

Flower 1 in. long, yellowish
white. Purple spot on each
side of keel at apex.

Little Oak, Mar. 14, 1900.

Allocarya californica -
south edge of Pear Orchard
near corral at Little Oak - good
specimens in hb. taken some
years ago. Corolla ^{white} with yellow
eye, this promptly fading
out to white, probably by
the second day. Processes
in throat almost none.

Peucedanum utriculatum,
Araguipa Hills, in fl. no
spms. taken. Bractlets of
the involucre 7 to 10, narrowly
linear to spatulate, acute
or acuminate. - Mar. 15,
1900.

Sanicula bipinnata - plants
rather past flowering; bractlets
5 more or less, lanceolate, very
small. Odor like *S. tuberosa*

Little Oak, Mar. 14, 1900.

My dear _____:

This surpasses any-
thing which I have seen
in many years. Spring
is just bursting and great
blocks of country are as
white as if with snow
- just-bloom-laden plums
and prunes.

Valley Black & Douglas Oaks
are taking on faint shades
of green, yellow and red;
the leaves will grow into
dark and darker shades as
the summer lengthens. Mr.
Buckeye, however, full of
of his new-born pride, &
puts on his very darkest
coat to begin with
but he'll get withered

Little Oak, Mar. 14, 1900

and were before the summer is half-over his foliage is of so dark a green now that the hill slopes look light; yet there are dark compared with the green of valley fields.

Last night the eastern sky was flushed pink; and pure white branches of the prune trees were silhouetted against it. It's here a pure reveal of color, and the days are Arcadian with Sunlight and stillness. Never enjoyed the color so much before.

Ralph Platt is giving up all his time to the lady just now. I told him that ~~the~~

Brew

Little Oak, Mar. 14, 1900.

Cottonwood was a sight more interesting and he'd better come along; but he only snorted!

Yours for Color, Jepson

Wednesday, Mar. 14, 1900.

Brodiaea laxa. - No. 523.

Count of flowers in an umbel.

No. 1 - 31 flowers - plant 3 ft. high

No. 2 - 26 " - " 3 1/4 in. "

No. 3 - 19 " - " 3 3/4 in. "

No. 4 - 48 " - " 28 in. "

No. 5 - 40 " - " 26 in. "

No. 6 - 14 " - " 26 in. "

No. 7 - 27 " - " 25 in. "

No. 8 - 48 " - " 30 in. "

No. 9 - 39 " - " 34 in. "

No. 10 - 16 " - " 24 in. "

No. 11 - 9 " - " 15 in. "

- see over -

Little Oak, Mar. 15, 1900

No. 523. = *Tritelia*

Brodiaea laxa (Benth.) Nutt.

Leaves to each peduncle

Two, sometimes longer than the peduncle.

Perianth, stamens, pistil - all light blue. Outside of perianth with 12 dark-blue veins, 6 to tip of segments, 6 to sinuses. Perianth in age becoming a darker blue. Only a small portion of the filament free - below adherent to tube.

Stamens dehiscing blue pollen. Long stipitate ovary and straight style lying on one (lower) side of tube. When anthers are white (empty) the style arches up and stands in center of mouth of tube!

Calandrinia Menziesii.

No. of Stamens:

10, 10, 11, 11, 12, 14

12, 11, 12, 12

I find a flower with 9 normal stamens and a tenth with a fork at the top, the divergent branches bearing each an anther.



Rude sketch, $2\frac{1}{2}$ to 3 times enlarged.

Evidently resulted from lateral coalescence of the filaments. Noted a similar case in Nine-bark at Berkeley about 1 week ago, only there was no fork. - Mar. 15, 1900.

Osage Cañon, Mar. 15, 1900.
No. 524.

Delphinium decorum - No. 524.

Petals somewhat whitish
with fine purple veins; upper
smaller than the lower.

The Buckeye as I look
down on him here
in the hills is mighty
pleasing. His rich tropical
foliage quite hides all the
stem and branches. An
oak seldom conceals this
completely the architecture
of the tree.

Canalis nodosa Huds. is
one of the most aggressive
and rapid spreading of
weeds. Osage Cañon, in the

Little Oak, Mar. 15, 1900.

Arquiza Hills, is full of it
this spring. *Nemophila*
parviflora forms white circles
within the shade limits
of a Live Oak (*Quercus wislizenii*)
but this weed is thick
amongst it this year.
- Mar. 15, 1900.

No. 525.

Quercus wislizenii - No. 525.

stamens, 5, 6 (or 4); old
leaves about all off the tree,
new leaves pretty well started.

No. 526.

Quercus Douglasii - two trees
side by side, one in nearly
full leaf, the other just
starting. - No. 526.

Araquipa Hills.

Lathyrus

Same sp. as on Culls in
Mapa Valley and at Berkeley
- flowers being visited by
a moth.

Collinsia sparsiflora F. & M.

Araquipa Hills - distinct
tit-like protuberance or
gland on upper side in
place of fifth stamen.

Matricaria discoidea

in fl. no spms. taken. Three to ⁴ inch.
Bracts of the involucre broadly
oblong, scarious-margined, many.
Receptacle slender conical,
heads 2 or 3 lines high.
Corolla tubular; no limb.
Leaves [↑] with broad rachis.
Pinnately dissected,

Mar. 15, 1900.

heads on short leafy peduncles.
Common in roadways and
old corrals. - Mar. 16, 1900

- *Erodium moschatum* is very
abundant and of rank growth
in the orchards, vineyards
and gardens. It is the only
species which I notice.

"No. 527. = *B. hirta* Moench.
Boiss.
- *Brassica alba* - "No. 527.

Garden at Little Oak. "White
Mustard" Sepals linear, spreading
at right angles and releasing
the claws of the petals. The
claws spread more or less
making a flower 5 to 8 lines
broad. Blade $2\frac{1}{4}$ to 3 lines
long. No pods mature but
no pedicels exceeding $\frac{1}{2}$ inch.
16 Mar.

Little Oak, Mar. 17, 1900.

- *Allocarya stipitata*, in fl.
corolla white with yellow
eye which changes at
last to white; limb 4 to
5½ lines broad. - Near
Little Oak; no spms. taken.

- *Veronica peregrina* L.

Corolla white, scarcely
more than 1 line long;
upper pair of stamens (next
to the single upper lobe)
the only pair. Corolla
not exceeding calyx lobes.

- Little Oak, Mar. 17, 1900.

- My father remarks that
Mayflower, *Anthem. Cotula*,
is not nearly so common
as formerly. It was once a
very great pest hereabouts.

Mills College, 1900.

Trip to Mills College,
11 May, 1900.

Tidal Canal Bridge: - *Silene maritima*.
Milk Thistle, 5½ ft. high;
corollas with filiform tube
conspicuously dilated below
the narrowly linear lobes.
Style without knob so far as
I can see by rough exami-
nation and no obvious style-
branches, the style merely
notched at top. Outermost
bracts - the very lowest -
ovate with prickly-ciliate
margin, the middle and
upper bracts with ovate-
lanceolate spine-tipped or
rather spinose apex which
is abruptly spreading from
the very much appressed base.

Mills College, May 11, 1900.

the strongly appressed base is somewhat contracted below the ovate or ovate-lanceolate base of the spine. The whole of the abruptly spreading portion of spine is $1\frac{1}{3}$ in. long or less, eye-measured. Leaves very conspicuously nick splotted & continuously along the veins (scarcely along the midrib); auricled at base; $2\frac{1}{2}$ ft. long or less; 1 ft. wide or less; sinuately pinnatifid, strongly undulate at the sinuses. The upward undulation is very remarkable the tissue below the opposite sinuses being

near 90.

St. Helena, 9 Mar. 1900.

almost vertical & parallel.

No. 528. Caryophyll. - *Aragripa*
Hills. 3/14/00. *Stellaria interm.* Nutt.

No. 529. *Cerastium viscosum* L.
near St. Helena, Mar. 1900.

No. 530. *Plantago*, with no. 529
ssp. *puberulus*

No. 531. *Lathyrus vestitus* Nutt.
= *L. bolanderi* Wats. var. *violaceus* Gipsom.
Howell Mt. grade to New Eden.
Mar. 9.

No. 513a. Sets of plants from
the shade of deeper pine
forests, growing in needles-
than 513. *Viola*. Mar. 9.

No. 532. *Plagiobothrys nothofulvus* Gray
Hills towards Sanitarium. Mar. 9.

No. 533. *Ranunculus californicus*
var. *nuttallii*
Hills east of St. Helena, Mar. 9.

No. 534. *Thymocarpus radicans*
Bth. with no. 533, Mar. 10, 1900

St. Helena.

9 Mar. 1900.

No. 535. *Amsinckia* ^{intermedia F. & M. det. F. Chisaki}
~~*Douglasii* Hook. & Ar.~~

St. Helena, hills, Mar. 10, 1900

No. 536. *Lupinus nanus* Dougl. Det. obs

C. P. Sm. Crystal Springs, Mar. 10, 1900

No. 537. *Lepidium acutidens* Howell.

Little Oak, Mar. 1900. No. 537a =

No. 538. *Salix laevigata* ^{L. oxycarpa T + J.} ~~Bebb.~~

Ret. C. Schm. Alamo Creek, Mar. 14/00.

No. 539-543. *Salix*, with 538No. 544 - *Amsinckia*, ^{"Compositis, Greene, only a form, or condition of A. Douglasiana Hook. det. Mc Bride."} ~~Jepson's~~
Farm. Mar. 1900. ^{intermedia F. & M. det. F. Chisaki}No. 545 - Alamo Creek, *Amsinckia*,
Mar. 1900, Dupl. 519!No. 546 - *Valerianella*, *Asaquipa*
Hills, Mar. 1900. *Zygadenus* ^{Mats.}Howell Mt., Mar. 1900 (*premontis*)No. 547. *Penstemon parviflorus*
Corolla 6 lines across.Between Mapa River and
Sanitarium. Mar. 1900.

Mar. 1900.

No. 538 A. *Salix* ^{*laevigata* Bebb.} - Osage Cañon

Berkeley, May 1, 1900.

- Today is Mayday! Miss Florence Mayhew remarked this morning how delightful a festival it was; there were no duties to perform, no church to go to, no gifts to make - a festival of pure pleasure.

And it is celebrated among the trees - at least always in California. The groves of native trees - particularly of valley oaks - in little vales, are preferred places. There, beforehand, a dancing platform is erected and for the afternoon games are arranged. Some old Spanish feats with horses were engrafted upon the Americano's California Mayday!

Vacaville, May 16, 1900

Anthemis Cotula - rays commonly 13, sometimes 1 or 2 more or less. $\frac{1}{2}$ to $1\frac{1}{2}$ ft. high; central part of head with subulate or slender bracts. How many of our *Anthemideae* have persistent involucre bracts?

= *Hemizonia pungens* (H. & A.) T. & G.

No. 548. *Centromadia* - May form, on alkali. No pappus! Rays 29 to 33! The head terminating the main stem has longer involucre bracts; these I speak of as free ones below the ones enfolding ray achenes. This species is fast passing. *Greenei rudis* has scarcely appeared.

= *Hemizonia parryi* ssp. *rudis* (Greene) Reck.

No. 549 - Seedlings of *C. rudis*. Can detect no vegetative differences.

Vacaville, May 16, 1900

No. 550 - *Juncus balticus* ^{Wild. group} _{det. F. V. C.}

Little Oak, May 16, 1900.

- *Brodiaea minor* - in flower, alkali at Little Oak - perianths blue-purple, thick. Stamens as long as or a trifle longer than the anthers, with 3 short teeth at summit. Anthers emarginate, , about so. Filaments of fertile stamens appearing as a very marked ridge all the way to the base. Anthers also emarginate at base. No spms. taken; taken in previous years. cf. No. 4238.

Achyrochaena mollis - nearly gone now - few heads of achenes left.

Uacaville, May 16, 1900

Brassica nigra - often 8 ft. tall; the racemes of flowers at a distance look round and globose if the flower cluster were

head like on long slender peduncles - the young pods soon appressed to the rachis. The raceme is short because it passes out below as quickly as it comes in above. It is in full flower here now.

Achillea Millefolium - rays 4 or 5.

The small lanceolate or linear-lanceolate ^{petioled} leaves of the panicle of *Brassica nigra* are noticeably drooping or pendulous.

Uacaville, May 16, 1900.

Monterey Cypress - hedge opp. W.W. Smith, now dying. R.H.P. says the "doodle-bug" begins at the tip of the twig and works back.

College Yard Cypressess - went all at once when they started. R.H.P. thinks it was about 1887-89. It is my impression they were beginning to die generally as early as 1885.

Same thing all through the county - out towards Dixon and away down towards Rio Vista.

R.H.P. says *Fraxinaria nutica* was found by him at Tolamas.

Vacaville, May 19, 1900

Convolvulus arvensis L., in
abundant flower; corolla $1\frac{1}{2}$
to $1\frac{1}{2}$ in. broad.

No. 551 - *Vitis Californica*, Ten Br.
2-branched ^{10th}

No. 552 - *Asclepias speciosa*.

Alamo Creek. Plant unbranched,
 $2\frac{1}{2}$ ft. high. Leaves on short
petioles, 4 or 5 lines long, broadly
oblong, widest at the base and
tapering toward the apex.

Peduncles longer than the very
wooly pedicels. Lower umbels
with 9 to 10 flowers, the
upper supermost. from 18 or
20 to as many as 55!!
Hoods with a short involute

Vacaville May 19, 1900.
base, above this abruptly
contracted into a nearly flat
lanceolate portion. Hoods
rather more than twice as
long as the staminal
column, spreading upwards.
Horns incurved over the
central disk, with 1 or 2

small or minute teeth on
the back near the middle.

Petals pink, somewhat
tomentose outside. Brackets
slender subulate. Hoods 6 or 7
lines long. Hoods white (or
tinged with flesh-pink), fading
yellowish.

Vaca Mts.

Gates Cañon, May 21, 1900

- No. 553 - *Salvia spathacea*,
connective continued below
filament as a slender or
capillary projection. Middle
lobe of lower lip broadly
obcordate.

Clarkia concinna - note
the bilabiate position of
the petals $\frac{3}{4}$, and the
sepals abruptly reflexed
at the middle.

- No. 554 - *Brodiaea* ^{*grandiflora* Sm.} *Staminodia*
tapering to a distinct point
usually longer than the
anthers, rarely emarginate or
with a notch on each side

Gates Cañon, May 21, 1900
of the point, erect or appressed
to the corolla, not connivent
around the anthers and closing
the tube as in the Little
Oak *Brodiaea*. See ahead 5 pp.

- No. 555 - ^{*Dichelostemma volubile*} *Stropholirion* ^{*B. volubile* Baker}
Brodiaea californica - staminodia
linear, emarginate; stamens
each with 2 lanceolate appendages
as long as the anthers. Tube of
perianth becoming very sharply 6-angled.
= *B. Jepsonii* ssp. *californicus*
No. 556 - *Lathyrus watsonii* White

- No. 556A - *Madia* ^{*gracilis* (Smith) Keck} formerly 557
Bracts of cup united! One of Greene's
new species (*anomala*?)

- No. 556B *Sphaele calycina*.
Leaves in 3's - 1 individual -
(fls. with spm. from dif. plant.)

Gates' Cañon, May 21, 1900

No. 556 *Eriophyllum*
Annual! Rays most
commonly 13, 3-notched at apex.

No. 556d - Lower lip violet
purple, upper whitish or
very pale lavender -
Collinsia bicolor.

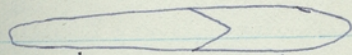
Base of calyx densely villous
in fruit. 2 ft. high.

No. 556e. not used.

[No. 556i. - *Calycanthus occiden-*
talis ^{H. & A.} - Petals of a deep
wine color, when fading,
after flowering, the
upper $\frac{1}{3}$ first becomes
brown and is sharply
defined from the
lower part, not

Gates Cañon, May 21, 1900.

horizontally but by a V,
somewhat in this way:



lurid red brown part

Petal after anthesis.

Petals about 20 to 25.

Stamens with white anthers,
lurid on the inside; filaments
about $\frac{1}{3}$ line long. Styles
as long as the anthers,
colorless. - Gates Cañon.

No. 556f - *Datisca glomerata*,
Durango Root. Stamens 8 to
12 (mostly 10). Staminate flowers in
axillary clusters of 3, on pedicels

Gates' Canon, May 21, 1900

2 lines long. Pistillate flowers
with 2 to 4 stamens. Styles
3, at the angles at summit
of the inferior ovary, each
with 2 long stigmas. Stem
hollow, ridged on the outside.
Plants 2½ to 4 ft. high.

No. 556G - *Aristolochia californica* Torr.
- leaves.

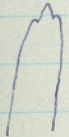
No. 556H - *Silene gallica* L.
Flowers small, pink.

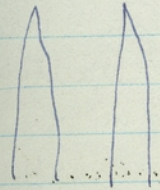
No. 556I - *Gilia*
Throat white, limb blue.

No. 556J - *Stachys rigida* ssp. *guineensis*
Corolla very decidedly
spotted; calyx-teeth rotately
spreading.

Gates Cañon, May 21, 1900

No. 556K - l.c. *Staminodia*
with a distinct notch on
each side, in some cases.

Thus:  or the point
somewhat sharper.

 Usually
thus:

Colors in 1900.

It seems to me that the colors are particularly beautiful this year or that I am perceiving colors before undetected. This year the University Hill grew up to very rank grass which was very green and beautiful, in shade and in sunshine with the wind making ripples over it, light waves across the grass, having the effects of shadows. Then when the change came in May - the passage into summer brown - oh the transition colors! that full bursting

Berkeley, 1900, May.

suggestion of the hill, the indescribable reddish or brownish tints which were tinting the hill in little areas here and there; but so transitory! A few days ago it was green, now it is straw-white!

Coming down on the train from Vacaville I noticed on the Berkeley Hills the color of the oaks against the reddish-brown hills.

The trees looked more beautiful, showed to greater advantage against the reddish-brown than against the green. Of course the late summer hillside

May 25, 1900.

color is very dull and
desolate and dirt-brown.

"What Record doth the Buckeye
Keep"? — *Aesculus californica*
Flowers irregular in many
small details. Petals not
regularly disposed; some
sharp, some blunt. Stamens
elongating remarkably after
flower is open. Filaments
growing to 4 or 5 times their
length and standing erect
instead of lying down
against the petals. — Berk-
eley, May 25, 1900.

Trip to Niles, June 1, 1900

The mornings here are beautiful.
quiet and cool; the afternoons
windy and often disagreeable.
So went for a drive in the
morning; first to Mission
San Jose, through the fine old
places there with magnificent
trees surrounding the houses;
one place was particularly fine,
owned by a Spaniard, Senor
who made money on a
coffee plantation in Guatemala
and is spending it here. The
place next to it has one of the
finest Washingtonia palms
I ever saw in Northern California
seemed to be 35 or 40 ft. high.
There were fine old date-palms,
figs and olives.

Niles, June 1, 1900.

The original old Mission Church has been torn down but the present church occupies its site and the entrance way is paved with the old tiles.

From here we drove through the pass to Sunol Valley, then to Sunol and up Sunol Glen, then down Niles Cañon to

Niles where the Alameda Creek is the object of the Spring Valley Water Co's affectionate interest, an immense amount of money being spent to put in a new pipe line. I saw Carduus marianthus Greene in the Cañon 7 ft. tall. The old Vallejo Mill still

stands. This Vallejo was a brother of General Vallejo. The old Spring Valley pipe is built for a long distance on the masonry of the old Vallejo Flom Mill ditch. Formerly Niles was called "Vallejo Mill".

Niles still boasts of one old millstone which was said to be

Inverness, June 6, 1900.

Drove today with Mrs. Hamilton, Mrs. Charles Wall Howard, Mrs. Ben Morgan, Miss ^{Beatie} Wood, Miss Isabel Stockton, & Mr. Hamilton to the ocean, from Inverness by way of the White House, Alcantara's. Tomales Bay is shoaling very rapidly. Mrs. Hamilton can remember when the mud flats did not exist and when a schooner brought the lumber to build the White House near its present site.

We passed ranch after ranch on the ~~Shafter~~ Shafter Estate; the Muddy Hollow Farm,

Drake's Bay, June 6, 1900.

etc., coming finally to the New Albion Farm where we had an elegant lunch and saw the dairy.

There is a great deal of *Carduus edulis* hereabouts:

The spines are interwoven with hairs cobwebby fashion and are turned outwards at a considerable angle.

The orifice of the involucre is much contracted; so that the flower cluster proper is very small.

On the contrary the sub-aculeoscent thistle* which is rather frequent here—

* *Cirsium quercetorum* (Gray) Jepson

Drake's Bay, June 6, 1900.

i.e. on this drive, has the involucre broadly cylindrical and not ^{at} all contracted, the flowers being much more conspicuous

No. 556L. *Delphinium californicum* — plants decidedly lighter than my head — growing in thickets — New Albion Farm. Upper petals entire or very slightly emarginate, ~~to~~ with a woolly tuft at apex on the inside; lower pair bifid, woolly on the outside. Raceme very dense, over 1 ft. long.

— *Corium maculatum*, at White House, 7 ft. tall.

New Albion Farm, June 6.

- No. 556^m - *Asagalus pycnostachyus* ^{Gray}
 Leaflets 19 pair; flowers
 yellowish-white; plants
 20 to 24 in. high; stems
red; leaves canescent
 with soft short hairs;
 New Albion Farm.

- No. 557 - *Rodolia laxa* Wats.
 Plants 4 to 8 in. high; outer
 perianth segments much
 smaller than the inner;
 the latter emarginate. - Inverness

(*latifolia*),
Orientalis, in fl; petals rhomboidal,
 acuminate; pink in color. - Inverness

The woodsmen here say these ^{Bishop}
 Pines are Pitch Pines because
 they have such a flow of
 pitch. - more than other pines.

Inverness, June 8, 1900.

"The trees return you what
 you give them says Professor
 DeConte; they return me far
 more" says Mrs. Wood!

- Frag. Calif. fruits, 4 lines
 in diam.
 - Rosa Calif. petals - 5 to 8.

No. 557 a. *Smilacina* ^{stellata var.} *secalifolia* Nutt.

No. 557 b. *Boykinia* ^{Secund Valley Cascade} *elata* Greene.

No. 557 c. *Sisyrinchium*.

No. 557 d. *Phacelia malaeifolia* Cham.

No. 557 e. *Rhamnus Californica* ^{typica}

No. 557 f. *Filago Gallica*

No. 557 g. *Euonymus occidentalis* ^{nut.}

No. 557 h. *Alder* (*Alnus oregana*)

Berkeley to Visalia.

Left Berkeley Friday morning at 10:00, taking the Visalia train which goes by way of Livermore. Had a good view of the Inner South Coast Ranges, it having rained a day or so before. There seems to be quite a gap in the region of Mt. Hamilton, sometimes before one sees Pacheco Pass. The southernmost South Coast Ranges are exceedingly desolate looking and treeless utterly. The alkali plains between Los Banos and Lillis were a study. Very desert looking. Met Col. J.B. Chinn on the train. Arrived in Visalia at 8:00; were met at the hotel by Mr. Hopping, who gave us road directions.

Road Directions

June 15, 1900.

Pogues is about 18 miles east of Visalia. ^{North of}

Next place Redstone Park beyond Three Rivers P.O. 3 miles. Next place Watson's Spring, 10 mi. end of wagon road. Then 5 mi. to Old Colony mill over wagon road overgrown with brush & weeds. Then 5 mi. to Helsted Meadows.

At Watson Spring rope road.

At Old Colony mill, tree bars across road 1 mile this side.

Cross right over Mt. Silliman trail, Don't break, keep west of n. Skirt edge of bare mountain, trees on left side. Good feed at Pond M. & other meadows in this region.

Redstone Park ~~return~~ Giant Forest

camp, across "lower food."
Permanent camp of Mr. Hopking.

The botanical trip into the Giant Forest region is one I had planned for a long time. I am accompanied by a student of botany, Mr. G. G. Stone. We are equipped with 2 mules carrying provisions for 2 months, and our botanical supplies. The mules are good gentle animals; one is old (said to be 13 - all of which he is!) the other a young vigorous animal that can be loaded far more heavily. We have lead ropes. I should prefer to have halters, it would pay. Anne may be stubborn!

Visalia to Pogue's

June 16, 1900. Saturday
Left Visalia at 2:15. Were helped in the packing by Mr. Woodsey, Principal of the High School, and many others the most efficient of whom was Mr. Hopking.

We created great excitement as we passed along the road east of Visalia leading to the foothills; there were numerous teams coming in and every one shied at the mules with their huge packs. Some people stopped their teams and got out and lunged in like grim death to their fieriest horses heads as if a railroad train were passing! Staid buggy horses were converted into

Lemon Cove

Visalia to Pogue's = ↑

devils by an instant glance
at our mule train. The
mules seem tractable.

One we name Hot Hate
the other the Sierra Night-
ingale. Any one can
understand why any mule
should be named Hot Hate
or Sierra Nightingale. Sams
says Hot Hate from
stern view looks like
the Battleship Iowa.

The mules are killing
the old Cottonwoods. Every-
where I look Cottonwoods
are dead or dying and
with the huge parasites
in great balls over them

June 16.

For about 12 miles we passed
through the "primitive forest
belt" of the valley bottom, the
oaks now much cut out. Valley
Oak; *Salix nigra* with its
slender lanceolate leaves
giving to the tree a light
feathery appearance much
in contrast with the willow
of the Bay Region, many very
fine tall trees of this 30
& 40 ft. high. *Lippia*
cuneifolia formed prostrate
dense mats - in fl - Luce
Bark *Lippia*, Buttonbush in fl.

June 17, Sunday.

After about 4 miles this morn.
we came out into the rolling
treeless plain; the change
in flora abrupt. Turkey mule

= Lemon Cove.

Visalia to Poques ↑

in fl; Vinegar weed not in fl;
and dried up *Erodium cicutarium*
Hemizonia and *Taraxacum* appearing

C. H. Teague, a farmer of
this region gave (young) me
a ride in his buggy, and
told me something of the
country. I always like to
talk with the people of
the country through which
I am passing.

The Blue Oak comes
in promptly with the first
rise of the low foothills from
the Hog Wallow plains.

In an irrigation ditch
I find *Jussiaea californica*;
stamens 10, 5 long, 5 scarcely
shorter.

June 17, 1900

I must not forget to note that
last night we had a most
terrific plague of mosquitoes
& scarcely slept all night.
Before taking off the packs
last night we studied the
diamond hitch which was
in vogue with our friends who
packed our mules. We took
it off the first mule, hitch
by hitch, restoring it until
we thought we had it. We
then confirmed our attempt
by trying the other mule in
the same way. This morning
we succeeded in packing
them all right. A small boy
who happened along showed
us the Fourth Cavalry hitch
and one mule carried his

Pogue's or

burden until now under that seal. It is a much simpler hitch but not nearly so effective I should think. The Squam Hitch is also said to be simple. I do not know it. To learn how to make the Diamond Hitch is a liberal education; to make it after being instructed one does well, indeed; to tie it after seeing it done once - that amounts to positive genius!

Monday, June 18.

Camped 1 mile beyond Lemon Cove (Pogue's). Mesquites here but not so bad. Ditch with good mountain water.

Lemon Cove, June 18, 1900.

Fine Lemon orchards all about Pogue's; trees for the most part full of fruit, thriving and well kept. The hamlet of Lemon Cove is a neat place. Found a U.S. Army troop camped on the Navaho, about noon today. Proved to be Capt. Wasti's troop in charge of the Sequoia National Park. Presented to him my letter of introduction from Ralph Hopson. He was very kind and obliging, and freely gave permission to carry fire-arms through the Reservation - *meteloides*.

The *Datura* opens its flowers about 9:00 in the evening; the flowers look

Lemon Cove to

very beautiful; the funnel-
form limb folds or hangs
downward at nightfall for quite
a distance, thus

very roughly.

I did not mark of them but
they do not seem to ^{hang} last but one
day.

Soon after the Blue Oak-
Quercus wislizenii came
in. Also the Buckeye.

Rhamnus crocea was found
near Three Rivers; 6 ft. high;
large leaves; fruits crimson
perhaps better ^{nearly} scarlet, much
like currants in size and
shape.

- The Lycamore follows
the Kawrah in three or four
miles beyond Lemon Cove;
indeed, even, to Watson's Spring.

Three Rivers, June 18, 1900.

Hopping tells me the exact
length of a cinch rope is 33 ft.
lunched at Carter's, Three Rivers.
At Three Rivers we saw the legend
"Meals 25c". There was a Sunset
Telephone Sign outside of Carter's
gate. We followed the north f.
in the aft. thinking we had left
the signs of civilization behind
us, when lo, in 4 miles we
saw a little sign in the cañon:
"Ice-cream. Iced milk."

[N. 562. ^{*Centaurium*} *Grythrala* ^{*varicosa*} ~~*Gled.*~~
Anthers linear. Petals elliptic-oblong,
acute or almost obtuse, rose-color.
Throat white with 5 ^{red} crescents
at the mouth. Petals shorter
than tube. Stigmas spatulate-
obovate. See p. 134. Kawrah.]

Tuesday, June 19, 1906.

Mr. Sam Halstead, Kaurah, Calif. Camped at the ranch of this mountaineer last night. Feasted on delicious peaches and apricots.

River bed: *Baccharis viminea*,
Mule Flat, Alder, ^{*H. rhombifolia*} Sycamore,
Yerba Santa + Fremont Cottonwood
Ceanothus cuneatus came in
at Three Rivers and Manzanita
here. *Isoplepis varilla* has
been abundant all the
way from the Army Camp on
dry hills in the cañon = *A. equi-*
ocarpa Benth!

- Our kayaks are of two sorts:
on one mule canvas kyacks;
on the other wooden boxes,
wire-bound, hinges and hasp-
caval-oil boxes made over.

Halstead's Ranch.

- Between Lemn Cove and
Three Rivers *Marrubium*
vulgare was very common
in the dry cañons.
Helianthus annuus was
abundant on the roads in
the valley.

- Our mules are fat and do not
crop much from such pasture
as we happen across. They
will undoubtedly get their
appetites by the time we
get up into the mountains.
Both are not very slow but
have "corks" as well. These
are very necessary for
the rough country we
shall go into. What
called "corks"?

Lemon Cove, June 18.

✓ No. 558, *Eryngium globosum* Jepson.
Dry plains east of Lemon Cove.

✓ No. 559. *Juncus californica* Jepson.
= *J. repens*
Hills a pond near Lemon Cove.
No. 560.

No. 563. *Asclepias eriocarpa* Benth.
Three rivers. See note below. {also vol. 5:195

No. 561a. *Senecio Douglasii*, DC.
Dry hills from Lemon Cove to Davis.
Days 11 or 12.

✓ No. 562. *Erythraea*. See descrip. 2p.
[p. 131] back. Met with as far as Davis.
No. 562a. *Allium* ~~*hyalimum*~~ *Currant*
det. R. B. Judd 1954

✓ No. 563. *Fraxinus dipetala*,
Davis: to Watson's Spring.
Asclepias eriocarpa. See descrip. p. 146

No. 564. *Chorizanthe*. No. 14.
staticoides Benth.

Perianth rose pink; segments
linear - Halesteads Ranch to Davis.

No. 565. *Neumada*

Three segments spreading
upward, with two red dots toward
the base, a faint yellow
spot below there; two lower

* For no. 561 see p. 106.

Halesteads Ranch to Davis, June 19.
1100 ft.

Segments spreading down, all
nearly distinct. Corolla pale
pinkish. Dry hill
var. *viscidus* (Cov.) Grant.
Det. A. L. P.

No. 566. *Eummaus humulus subsecundus*
Corolla subregular, the two upper
lobes a trifle larger; throat
nearly red, lobes pale. Dry hills

✓ No. 567. *Gilia pluriflora* Hal.
^{*Eriocrum*}
Petals oblong, acute, faintly
3-nerved. Corolla pale blue, almost
salverform. Dry hills, very

No. 567a. *Pentstemon* {Lemon Cove to Davis} {showy!}
^{overfl.} See note p. 144 ahead

✓ No. 568. *Ceanothus* ^{*divaricatus* Nutt.}
^{*leucodermis* Greene}
12 or 14 ft. high; trunks clustered
forming a large round head.

Trunks ashy white. Fruit wet
with a glandular exudation, staining
pepper on the hands yellow.

✓ No. 569. *Gilia filipes* Bth.
^{*Linanthus*}

Corolla lilac with yellow throat; very
abundant on dry open hills.
anthers yellow

1100 ft.

Halstead's Ranch to Davis

No. 570. *Hemizonia Kelloggii* Greene
Ramp 4 or 5, yellow, almost as
wide as broad as long, 3-
notched at summit. Disk flo.
1 - several.

- *Eremocarpus setigerus*; Stamens
6 or 7. Ovary enclosed in an oval closed
calyx with long slender tail at summit
enclosing the slender style. Flowers
erect in the axils below the stem clusters.

- *Rhamnus crocea* is very striking
with its crimson berries. Capt.
Wright wanted to know what it
was.

No. 571. *Fraxinus dipetala* - 15 ft. h.

Full of fruit. Would attract the
attention of the non-Botanical
observer. Davis to Watson's Spring.

occidentalis Torr.

- *Cercis* - Red But - pods smell
exactly like the pods of cult. *C.*

June 19, 1900

No. 572. ^{Clarkii} ~~*Godolita*~~ *viminea* Spach.
Corolla *Sidalcea* color with a large
rose-color blotch on the center of
each petal; calyx-tube long
funnel-form! Stigma purple,
the 4 lobes in anthesis de-
flexed; pod with 8 strong ribs.
Calyx-lobes greenish or slightly
yellowish, parting under the
corolla in pairs. (1/2 to 2 ft. tall).
Dry hillsides crimson with this.

No. 573. ^{Clarkii} ~~*Godolita*~~ *dudleyana*
Corolla lilac, purple zone at the
very base and commonly with
a shower of purple dots on the
inside of each petal. Calyx-
lobes dull red, its lobes
remaining united and turned
to one side. Buds nodding.
Not observed? See p. 142.

No.

574. *Brodiaea grandiflora* Sm.
throat open; staminalia
rect, not turned into the ^{or connect about} the
stamen^{dia}, about as long as
stamens, acute or 2-toothed!
One flower with 8 lobes! +
4 stamens! cf. *B. minor*, p. 140.

- *Rhus trilobata* ^{mutt.} ripe fruit,
sticky crimson berry.
- *Calycanthus* in fl. *Vitis* leaf,
very common.

No. 575. *Lonicera*

- Flower yellow, lower lip broadly
linear, entire, curled backward
and downward ~~at~~ anthesis;
upper lip shortly 3-lobed, the
middle lobe emarginate.
Lower lip hooded slightly at tip.

- no. 576 *Mentzelia*, $3\frac{1}{4}$ to 2 ft.
high, branching. Petals

Halstead's Ranch to Davis, June 19.
1200 ft.

- golden-yellow, abruptly short-
acuminate, the acumination
induplicate, at least 4 in; scarlet
zone at base. *Mentzelia Lind-*
leyi T. & G. See p. 146.

- no. 577. *Euphorbia ocellata* D. + H.
Undoubtedly Curtis' "milk Parsley"
for Rattlesnake bites.

- *Cercocarpus parryi* - in fr.

- *Yucca* in bed of North Fork
of Kaweah. ^{whipplei Torr.}

— " — " —

- Very marked zone of *Adiantum* ^{fascic.}
comes in next.

- Mr. Stone says Yerba Santa used
as a substitute for tobacco and
that some tobacco manuf. fill
cigars with them.

- Thousands of acres of
Chorizanthe membranacea on open hills

Ranch, 1200 ft.

Davis' to Watson's Spring.

3000 ft.

No 578. *Ceanothus cuneatus* Nutt.

Appears to have much larger thorns than the one at Three Rivers which I called *cuneatus*.
Base of fruit reddish. As high as 12 or 14 ft.

No 579. = *Navarretia* p. *Gilia pubescens* Steud.

Same as plant from above Coulterville which had deeply 3-divided cots. Corolla slender funneliform, blue with white markings in throat. Stamens exserted. = *Navarretia pubescens* H. & A.

No 580. *Polygonum californicum*.

Sepals pink, sharply acute!
dry hills

- *Brodiaea minima* etc should be revised so as to stand in 2 species. 1. *Staminodia* erect, throat open. 2. *Staminodia* capricious about stamens; throat

North Park Kanabah River. Tulare Co.

June 19, 1900

closed.

- It is easy to see now why *Yucca* *Hemacladus* is a relative of *Boelia*; its upper lip with 3 diverging lobes (*Boelia fascim*) and 2 somewhat larger lower lobes parallel (or diverging).

- *D. centra chrysantha*, in fl.

No 581. *Cirsium californicum*
1. *Cirsium* = 3 ft. high, branching
leaves in fl. ovate; in fr. broadly
involucres hemispherical.

Hut for the tree-book in the way of illus. - road or grade up a hillside back and forth.

Fraxinus dipetala - on hillsides -
" *Quercus* - along streams

Sequoia National Park

No. 582. *Leptosyne* (discard insect damaged)Ray 5 to 7, yellow, elliptic
dry hillsidesNo. 583. *Gilia* + good sp. Peculiar
viscidula gray.
gray pubescence on heads.
Dry hills. = *Navarretia viscidula*
Bth.No. 584. *Cercis occid.* ^{entalis Torr.} Davis to
Watson's Spring.No. 585. *Godetia* (cont. no. 573).More common higher up,
in the *Adenostoma* zone.
Pod 8-ribbed, slender, broadest
toward the apex. A beautiful
species.

No. 585.

No. 586. *Collinsia tinctoria* ^(Hartweg, Benth.)
Corolla lilac purple. Two purple
transverse bands ~~on~~ upper
lip, one near throat on the= North Fork Kaweah River.
3000 ft.

Watson's Spring. June 19.

white field; one above on edge
of lilac-purple. Upper lip
closely reflexed, scarcely $\frac{1}{2}$
the length of ~~upper~~ lower.
Does not look like *C. tinctoria*
- has no yellow. Calyx-
lobes somewhat dilated toward
tip. Throat not hairy as in *C. bicolor*
of rank growth, 2 ft. high often.No. 587. *Echinocystis mac-*
rocarpa Greene. No. = *E. horrida* Conz.- *Dendromecon* - in fl. - 7 ft. high,
flowers 2 in. broad. Lower
leaves $5\frac{1}{2}$ in. long, oblong-
lanceolate. Remarkable woody base,
very thick and depressed.- *Collinsia bicolor*, in fl. with No. 586.
Throat very hairy, especially on
upper side. Markings on upper
much more ornate and highly
colored than in Bay Region plant.

Watson's Spring. 3000 ft.

Lotus crassifolius. Higher than my head in fr.

No 567A. ^{upper lip oblong, hairy on back, 2-toothed from the front (as seen from front) but with a small tooth turned backward from the notch; sterile stamens glabrous unless at very base; corolla tube short, with pink lines; stamens glabrous, dilated at the short, dilated base.}
Pentstemon
 Suffrutescent for a couple
 of ft; then herbaceous shoots

4 or 5 ft. long. See also vol. 5. p. 199.
 1 cent. from p. 135. *P. breviflorus* Lindl.

- *Chlorogalum powridianum*
 in fl.

Bigelovia arborescens? leaves
 and habit the same.

- *stipularis* Greene.
 No. 588. *Lotus* (= 596.)

Perennial from strong tap-
 root. Banner red, white at
 tip with purple veins. Keel
 white, only about $\frac{1}{2}$ as long
 as the white wings.

June 19, 1900.

No. 589. *Yucca whipplei* Torr.

Plants 12 or 14 ft. high; panicles
 5 or 6 ft. long. Making quite a
 show on the hill sides below
 Watson's Spring. (Lunched at
 Watson's Spring.) Outer perianth
 segments ovate or oblong lanceolate,
 inner broader, oblong, tapering
 to both ends. Flowers 2 to $2\frac{1}{2}$
 in - broad; doubtless $\frac{1}{2}$ in
 more or less than given.

Perianth white. Stamens
 about 5 lines long; dilated.
 Style very short; ^{T filaments} stigma greenish.
 Panicle pine-like, with one
 central axis and lateral
 branches only (= simple
 racemes?). Fruiting plants
 above Davis'; flowering plants
 at Cedar Creek. Flowers with
 millions of little white insects less than $\frac{1}{4}$ line.

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— *Lonicera interrupta*. —
Even the young fruits stain
the paper with a greasy secretion.
Cont. from p. 138 (no. 576).

— Cont. from p. 134. *Rosalepis* ^(*Ericocarpa* not) *vestita*, No. 563.

Leaves in 3's or some upper in 2's.
Hoods globose (not extended above)
with a ^{mere} slit on the upper side
through which the horns protrude.
The horns are small & approximate
the sides of the column. Flowers
pale cream. Buds pinkish. Horns
do not exceed stylar column.

Mr. Stone tells me he found
plants with the whorls of
leaves in 4's. Common
all along the Kaweah to
Three Rivers and up the Old
Colony Mill Road nearly to
Watson's Spring. cf. 5:195.
5:13.

Alt. 3800 ft. (North Fork Kaweah).

Cedar Creek, June 20, 1900

— Camped here last night. First-rate
camp. Flora rich. Here follows
a list of the plants observed at
this place.

- *Acer macrophyllum*, trees 30 or
40 ft. high; leaves 13 in. wide, & less.
^(4-15!)
- *Fraxinus dipetala*, common, 15 ft. or less.
- *Torreya* ^{californica}, ^{noticed} single low shrub.
- *Calycanthus occidentalis*
- *Quercus chrysolepis* - 40 ft. high
- *Quercus Kelloggii* - 35 ft. high
- *Umbellularia Californica*
- *Besulus Californica*, in fl.
- *Rumex crispus*, in young fr.
- *Dicentra formosa*
- *Corylus rostrata*
- *Alnus diversiloba*
- *Chorizanthe membranacea*
- *Madia filipes*
- *Erysimum asperum*

Cedar Creek, June 20, 1900

No. 590. *Heterogaura californica* Torr. ^{heterandra (Torr.) Cov.}

Petals pink, 2 lines long, oblong, acutish tapering below into a short claw. Sepals turned to one side and cohering, red. Stamens 4 long and 4 short sterile ones with rudiments of anthers. Style with a circular + flat stigma crowning it. Ovary obovate, short-hispid, the hairs erect. Plants 4 to 10 in. high. Leaves membranaceous. = *Gaura heterandra* Torr.

No. 591. ^{See p. 164.} *Eunamus* ^(to 8) *Grayi* Griseb. ^{det. A. I. G.}

Corolla pale pink, 6 lines long, lobes slightly unequal, the 3 lower larger, all strongly emarginate. Folds on middle lobe of lower lip yellowish and running down into tube. Calyx with short

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teeth, $\frac{1}{2}$ as long as corolla.

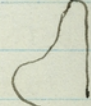
- *Heuchera micrantha*, 3 ft. high, abundant and conspicuous on the hillsides here. Just out of fl.

No. 592. *Fremontia californica* Torr.

Abundant and showy, from Watson's to Cedar Creek. Calyx in full anthesis 2 to $2\frac{1}{4}$ in. broad. Flowers solitary at the ends of branchlets. Leaves beneath either reddish or whitish tomentose, $\frac{1}{2}$ or $\frac{3}{4}$ to 2 in. long. Bark on young branchlets brownish. Leaves entire or mostly 1-notched above the middle. Style thick, hairy toward the base. Free portion of filaments ascending from the short tube. Also common from Cedar Creek nearly to Old Colony Hill.

Water at Cedar Creek nearly ice-cold; first taste of Sierra water. Delightful camp; ^{clear} maples, alders, cedars and many interesting shrubs.

N. Fork Kaurah R.

Cedar Creek, June 20, 1900
alt. 3800 ft.No. 593. *Diplacus* ^{*mimulus longiflorus* (Nutt.) Grant. var.} *calycinus* (Eastw.) Grant.Very showy; on cañon sides from
near Lemm Cove to Cedar Creek.Calyx - tube abruptly expanded
above. Corolla light yellow,
very beautiful; lower lobes
truncate, dentate or  One-
half of upper lobe is  about

So:

Should say that it was an
excellent variety or good
subspecies of the plant of
the Bay Region. In all
likelihood one of Greene's
new species. Odor very
honey sweet. Spans from
Kaurah River between Lemm
Cove and Three Rivers.

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No. 594. *Philadelphus californicus*
Bth. Common between Watson's Spring
and Cedar Creek. Flowers pure white,
less than 1 to 1 1/4 in. broad. Petals
broadly elliptic, notched at apex.
Stamens 26. Style 2-cleft, each
lobe 2-cleft. Petals and sepals 4.
Ovary almost wholly inferior.- *Sambucus glauca*, in fl. here; also another
Sambucus, leaflets with short-cirled pubes-
cence = *S. racemosa*?No. 595. *Quercus*Low densely branched shrub -
(4 ft. high).No. 596. *Hosackia* ^{*stipularis* Bth.} (= 588).Gummy - very sticky - in fruit
only. Perennial; stems clustered,
erect or nearly so from a stout root.
= *Lotus stipularis* Greene.

N. Fork Kansan R.

Cedar Creek, June 20, 1900
alt. 3800 ft.✓ No. 597. *Malvastrum fremontii* Torr.
Few plants seen.

Watson's Spring to Cedar Creek.

Flowers pale pink, ageing
white scarious. Four or five
ft. tall.✓ No. 598. *Cryptantha torreyana* Greene
Flowers white, minute. Watson's
Spring to Cedar Creek.No. 599. *Eriogonum saxatile*
Stem suffrutescent, branching,
the tufts of silvery-white
leaves at the end of each woody
branch making altogether a
low broad tuft which is
very showy. Peduncles naked,
bearing cymes of greenish-

Sequoia National Park.

Yellowish flowers. - Cedar Creek.

✓ No. 600. *Arabis sparsiflora* Nutt. var. *arcuata* Rollins
Dry hillsides, Cedar Creek (or
rather) steep cañon sides. Stems
of the season from a branching perennial base.
= *A. arcuata* Gray (= *A. maxima* Greene).No. 601. *Staphylea Bolanderi* Gray.
Very common and showy in
fruit, the bladders whitish
or light-colored. 14 ft. high.
Cedar Creek✓ No. 602. *Draperia systyla* Torr.
Shaded cañon sides under
trees. Flowers faintly lilac,
tube 1/2 in. long. Corolla tubular-
funneliform. Throat widening
upward. Stamens 5, unequal; fil.

Cedar Creek, June 20, 1908
alt. 3800 ft.

slightly ciliate towards base.
Stamens less than $\frac{1}{2}$ as long as tube.
Throat of corolla veined and nerved
in lilac. Plants 6 in. tall.

See p. 160.

No. 603. *Leurothamnus*? ^{*leucodermis Greene*} ^{*Nutt.*} ^{*divaricatus*}

Common on the canon sides
between here and Watson's
Spring. Doubtless the same
as 568. Trunk and branches
ashy-white, "berries" stain
pale yellow. See p. 162.

- *Fraxinus dipetala*; leaflets 5 or 7,
low serrate; terminal leaflet largest.

No. 604. *Leurothamnus* ^{*integerrimus N. & A.*} ^{*californicus*} ^{*(Nutt.)*} ^{*Gray*}
Kell? (*L. integerrimus* of Sierra
Nevada, Bot. Cal.). Branches
↑ see p. 162.

Sequoia National Park.

drooping with the weight of the
inflorescence. On some bushes
I find the panicles black with
ants. Flowers white - all gone but a

stray clusters. Bushes 10 or 12
ft. high or less; bark ^{slightly} yellowish +
green, viny. (*L. integerrimus*
of Fl. W. mid. Cal. 2nd ed. 253) See v. 4, p. 17 infra.

No. 605. *Colomia gilvodes* ^{*Allophyllum divaricatum (Nutt.)*} ^{*Gray*}
Shade of shrubs and trees.

No. 606. *Troximon*.

Probably not *T. nitrosum*. Achene
abruptly truncate, the ribs forming
a sort of toothed cup from
which arises the filiform beak.
Plants 2 to 2 $\frac{3}{4}$ ft. high. Heads
in fl. $\frac{1}{8}$ in. broad. Bracts purplish tipped
mostly; often with purplish bases.

Cedar Creek, June 21, 1908.
alt. 3800 ft.

No. 607. *Osmorrhiza brachypoda* ^{Torr.}
Shade of trees. Stems usually
clustered, erect, spreading in
age; root fleshy. Shaped about
so; specimen taken but lost.
6 in. long.

No. 608. *Blaytonia perfoliata* ^{Donn. ex Killip}
Involucre circular, rarely with
a tooth on one side, commonly
entire. About springs and
brooklets. Petals rotate from
the claws, notched at apex;
Corolla nearly white, 4 or 5 lines broad.
New var?

No. 609. *Aster macrophyllum* Pursh.
Bark gray, checked into very long and
very narrow plates, the fissures very
parallel. Trees 40 ft. high.
^{stenopetatum Pursh. ssp.}
No. 610. *Sedum radiatum* (Wats.) ^{Clausen}
Petals oblong, tapering upward

Sequoia National Park.

slightly and, with a soft mucro.
4 lines long. ^{Tipped} Rocky walls, canyon sides.

- *Potentilla glandulosa* var. *Nevadensis*,
^{out of fl.}

No. 611. *Madia elegans* Don ex Lindl.

Ray 8, sometimes 6, 3-cleft, each
with a brown spot at base. Ray
as narrow as 13. Disk fls. reddish
brown, 10 to 20. Lowest leaves
- 2 to 4 pairs - opposite.
Abundant.

(*glaucofolius* Jepson.)

No. 612. *Rubus leucodermis* Dougl. var.
Petals ovate, with a distinct claw,
4 1/2 lines long. (Stray fl). Out of fl.
= *R. glaucofolius* Reel.

No. 613. *Chamaebatia foliolosa* ^{Torr. Bonett}
Mountain Misery. Petals white,
almost round, with crinkled edges,
fl. 9 lines broad. Stamens 40 or over.

cedar Creek, June 21, 1900.
alt. 3800 ft.

Pistil and style one, the latter stigmatic down a fold on one side nearly to the base. Ovary and base of style hairy. Petals with a short claw. Flowers in terminal or sub-terminal

cymes. *Elymus glaucus* Buckl.

- ✓ No. 613A. Grass. Scattered individuals, ^{pine forest. Mules like it;}
✓ No. 614. ^{Charlie} ~~*Jodaea*~~ *dudleyana* Abrams. ^{prefer it to other grass.}

Doubtless the same as #573 collected lower down. Petals the same color but without band at base and commonly without dots but not always. Buds nodding.

No. 615. *Baccharis*

Top of a simple stem 4 ft. high

No. 616. grass. Mules select it greedily!

Sequoia National Park.

✓ No. 616a. *Lathyrus sulphureus* Brew.
Banner very short, slightly pinkish with purple veins on middle. wings short, keel short and broad, both white. All parts fading yellowish.

No. 617. *Asarum Hartwegi*. Leaf-
veins white-bordered. Each branch of rootstock bears 2 leaves and 1 fl. Fls. 2 to 2½ in. long, purplish-veined, hairy on the outside. Ovary 6-celled. Leaves as much as 6 in. wide!

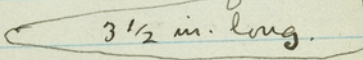
No. 618. *Gynoglossum grande* Dougl.
Leaves mostly radical and sub-rad.

✓ No. 619. ^{specimen disposed of - unsatisfactory} *Amegdalus* - small
tree 10 ft. high. ^{not} *Prunus virginiana* L. var. *deniussa* Torr.

Cedar Creek, June 21, 1900.

- *Brodiaea laxa*, with much lighter flo. than about Berkeley but I can see no dif. in technical character.
- *Hieracium albiflorum*
- *Brodiaea volubilis*, in fl. typical.
- *Collinsia tinctoria*, markings somewhat variable, white or again pale
- *Rhus trilobata* Nutt.
- *Lotus crassifolius* Greene. See no. 14,383
- *Libocedrus decurrens*
Two trees measured: 11-2; 8-11;
4 ft. from ground on high side;
about 70 ft. in height.
- No. 620. *Thysanocarpus curvipes*
var. *elegans* Rob.
- *Draperia* ^{*acutyla* Torr. no. 602.} *gregarious*, forming little colonies 5 to 8 ft. broad.

Cedar Creek, June 21 to
alt. 3800 ft.

- No. 621. *Collinsia childii* Parry.
Corolla whitish-lilac. Upper lip cleft half way. All four lobes notched. Markings scarcely any, dots on upper lip at fold. Seems to be new.
(Els. often pale blue; very abundant higher up on Marble Fork = 621/A.)
- No. 622. *Penstemon pulchella* Eastw.
- No. 623. *Allium*
Ovary as if 6-lobed. Flowers nearly; segments acute with a brownish midrib.
- No. 624. Umbellifer.
Stems from a cluster (2) of tuberos shaped thus  3 1/2 in. long.
Flowers white.
- No. 625. *Polygmastrae*

Old Colony Mill, June 22.
c. 5400 ft.

No. 626 [*Chorizanthe hirtiflora* J. & G.]
Eriogonum hirtiflorum Gray.

No. 604. "Deer-brush". Deer
feed on it, so do cattle;
makes the best browsing of
anything in the mountains
Good firm tallow. - Mr. E.
Britten, Three Rivers, P.O.

No. 603. "Buck-brush"

- *Osmorhiza ceratiformis*, in fr.

In Giant Forest:

Tree called General Sherman,
trail left from Round ^{Meadow}, over
slick rock, into forest
again, northerly direction,
about west of Long Meadow.
Do not turn down into basin
but keep same grade around.

Old Colony Mill, June 22, 1900.
c. 5400 ft.

Camp-fires - noticed that under the pines the fire will creep out in the dusty covering on the ground or fire humus which is concealed by the surface leaves and conceals the fire. One should bank up or scrape in about a camp-fire, forming a little trench which prevents the fire from getting out into the forest and working death and destruction to the living shafts of pines and the oaks with their emerald cloaks.

- Cont. from p. 148. *Mimulus inconspicuus* Gray, No. 591. Det. W.L.G.

Old Colony Mill, June 22.

I distinguish this for the following Zones: Desert (alkali zone) about Las Banas; Valley Zone, *Quercus lobata* and *Salix nigra*; Low Foot hill Zone (*Quercus Douglasii*); Middle Foot hill Zone (*Quercus wislizenii* & *Ceanothus cuneatus*); High Foot hill Zone (*Adenostoma fasciculatum*, "where this grows nothing else grows" - "Chamisal" - E. Britten, Forest Ranger. *Ceanothus* (spiny form with white trunks) came in the Middle Foot hill Zone and is here on the edge of the Pines. Black Oak Zone (*Quercus Kelloggii*, *Pinus ponderosa* and *Lambertiana*).

Old Colony Mill, June 22, 1900.

c. 5400 ft.

(See p. 198.)

No. 627. *Lathyrus crassifolius* Greene.
Keel very short. Wings, keel and a longitudinal area on banner red-purple, the red-purple lurid and rather well-defined from the whitish portion on the sides of the banner. Calyx reddish-brown. Fls. 7 lines long. Frequent and of rank growth. The great stems often bending to the ground under the weight of leaves, fls. & fruits. See p. 176.

Clarkia elegans - in Adenostoma zone; petals spreading laterally in pairs as noted in Coast Range.
C. rhomboides, more frequent in black oak zone.
Petals toothed at base.

No. 628. *Barbarea* (Greene's n.sp.)

Plants $\frac{1}{2}$ to $\frac{3}{4}$ ft. high. *B. paniculata* Greene.

No. 629. *Silene bridgesii*?

Very gummy & sticky; flowers not expanding in the morning; open during the night & closing in the morning. Petals white, blade nearly $\frac{1}{2}$ in long, cleft a trifle over $\frac{1}{3}$, nearly line wide. Crest consisting of two adnate appendages or ridges, with the unguiculate 2-toothed tip free. Petals recurved in anthesis; stamens long-exserted, 5 lengthening first. Calyx ovateish. Makes a curious appearance.

Inland Co.

Sequoia National Park.

There are some of the maxims of Britton the Ranger:

Do not lay your hand on a rock without first looking: there may be a rattler there.

Respect the ^{hills of} miles for they are not things with which to cultivate familiarity.

If a rattlesnake bites ^{you}, score the wound and suck out the blood, first binding a handkerchief above and decreasing the circulation - lest you die for it is a horrible death.

There is no animal that can make so much noise as a bear when he gets scared and starts down hill through the brush.

Julian Co.

Old Colony Mill, June 22, 1900.
c. 5400 ft.- *Calochortus vinetius*, infl. = *C. nuttallii*

- Yerba Santa: - corolla blue or blue-tinted, its 5 lobes little unequal; tube dilated upwards distinctly. Styles 2, distinct. Corolla 6 or 7 lines long.

No. 630. *Eriophyllum*

Infl. herbaceous white; rays always 5.

No. 631. *Trifolium ciliolatum* Bth.Sleep open hillsides. = *T. ciliatum* Nutt.No. 632. *Cirsium californicum*

1 to 3 1/2 ft. high, when small simple, when tall branching.

Crown of fls. in anthesis very broad (2 in.) and spreading. Diverging portion of bract cobwebby.

No. 633. *Chorizanthe membranacea*

Doubtless the same as that spoken of by you & others but which was more ornate and had very conspicuous scarious wings to invol.

Sequoia National Park

Written the Ranger:—

Tie your mule with a Bowlin knot. Then Mr. Mule can set back on it as much as he pleases and you can untie it with ease.

In steep brush country tie a rope across the trail and turn your mules loose. In the morning you will find them on the back trail where the rope is.

Many people think a mule has no sense. It is a widespread and popularly diffused error. But it is not so. A mule looks out for himself - He will not drink too much, even

Old Colony Mill, June 22, 1900
c. 5400 ft.

when he is warm and strikes cold water in the mountains. He will not drink when he is not dry. He does not eat things that are not good for him. He objects to getting his feet wet. He takes care of himself in ways that a man does not. He does not eat things that are not good for him. Kachy is a mule poisoned by eating poisonous plants.

Mules will not leave each other; tie one and let the other graze.

Camp at Old Colony Mill: nights cold and days warm; fine camp among the pines (Sugar & Yellow) & Libocedrus. Only disagreeable feathery mosquitoes $\frac{1}{2}$ hr. every morning &

Sequoia National Park.

evening. At evening, dusk till dark the grouse thrum. There are quail, doves and also large game: bears, panthers or California lions (one was killed two weeks ago 10 or 12 mi. down the trail); coyotes (mostly disappeared since the sheep were driven out - they follow the sheep). Acc. to Mr. Britten one sees a panther very very rarely and then you do not ^{see} him long, as they get out of the way very quickly. They are very shy and one might say cowardly when one remembers how very fierce and savage they are when attacked.

Old Colony Mill, June 23, 1900.

No. 633A. *Bomandra*

c. 5400 ft.

Sepals 5 (or 4 on the same infl.)
 Ovary inferior, 1-celled, ^{1-seeded,} with an embryo
 towards the base of abundant endo-
 spermin. a disk (or obsolete calyx?) corolla
 lines the calyx throat. It has 5 obtuse
 teeth alternating with the calyx-lobes.
 Stamens on the calyx (opposite to
 lobes) inside the disk edge.

No. 633B. *Thyanocephalus - nummularium*

(Oct. 3, 1901)

No. 629. *Silene*

The petals in full anthesis reflexed
 completely, becoming retrocurved
 as they close. [near *S. incompta* but color
 of petals dif. + claws not
 anticked.]

Godetia No 572 is of the Middle
 Foot hill Zone; No 573 begins where
 it leaves off and as no. 614 goes
 on up to the Sugar Pines.

Torreya - noticed one tree 13 ft. high.
Cercocarpus occurs in the Admestina
 Zone and below.

Sequoia National Park.

No. 634. *Cryptantha simulans* Greene.
 Corolla white, $\frac{3}{4}$ line broad.

L. FORMOSUS

No. 635. *Lupinus albicanlis* Dougl. var.
 (see p. 173 and no. 649) ^{proximus japon.}

Stems several from a perennial
 root, simple or branching, ascending,
 45 2 $\frac{1}{2}$ ft. long, loosely matting areas
 beneath the pines. Corolla dull white
 soon becoming sordid; banner narrow,
 its sides closely reflexed wings faintly
 lilac-tinged. Keel glabrous. Upper

calyx-lobe slightly notched. Stems if
 branching, usually branching at or above the middle
 into 2, 3, 4 branches terminating in racemes. I think

No 636. *Galium*

(nuda Torr. not)

I have met this
Lupinus in several
 places in the Sierras.

No. 637. *Osmorhiza brachypoda* Torr.
 Stems from the roots one or two or three.
 Bractlets in fruit closely reflexed.

No. 638. *Madia elegans* Don ex Lindl. sp.
^{elegans}
 Heads $1\frac{1}{4}$ in broad in anthesis; rays
 with purple spot at base.

No 639. *Eriophyllum*
 common from Cedar Creek to this point.

Old Colony Mill, June 23, 1900.
N. Fork Laramie River, c. 5400 ft.

The only sp. with large rays. Rays 13 to 16.

No. 640. *Rosa spithamea* Wats.

Plants 8 to 12 in. high, simple or somewhat branched. Flowers rose-pink, $1/3$ to $1/2$ in. diam. Petals round-ovate, notched at summit. Fls. change color! deeper in color in drying. Wats.

No. 641. *Brodiaea ixioides* (rather lighter-colored than in Coast Range, I think).
= *Triteleia ixioides* Greene

This is really a beautiful spot with the great trees, the deliciously fragrant wild Rose carpeting the ground and the Deer Brush white with bloom.

(Memoranda for Flora: Cf. Bot. Cal as to)
Collinsia Greenei.

Rumex acetosella and *Anthemis cotula*.
Rubus pariflorus. Shimmie Berry

No. 642. *Calochortus amoenus* Greene
Petals covered with scattered long hairs except at tip. Gland like reddish-brown felt, looking brown from the outside

Sequoia National Park.

of petal like a "blood-blister". Petals pink, almost the color of Bride Roses.

No. 643 *Potentilla glandulosa* ^{Trinkl.} ^{Wats.} ^{Nevadensis?}
Stamens 21 to 25; filaments not dilated. Petals yellow (not light-y.), elliptic.

No. 644. ^{*integerrima* H. & A. var. *puberula* (Greene) A. Gray} *beanothus* A. Deer Brush
= *C. integerrimus*!

No. 645. *Sambucus*. 6 + 8 ft. h.

- That portion of the ovary which is adnate to the calyx in *beanothus* is in fruit always persistent, is it not, as if low circumscissile? Noticed in several sp. ^{*whipplei*}

- *Yucca* come as high as Old Colony Mill, on rocky ridges next to Pines but not amongst the conifers.

Marble Fork, June 23, 1900.

Left Old Colony Mill aft. 7 June 23,
headed for Marble Fork.

- *Valeria Hartwegii*, just mt of fl.
- *Lotus crassifolius* - peduncles
extend downward below stem,
the leaves spreading horizontally.

I noticed this toward night. No. 627.

- *Aphyllon fascic.* - in fl.
- From Old Colony Mill to Marble Fork
passed through a fine forest of Western
Yellow Pine, Sugar Pine, ^{white} Fir, Libo-
cedrus, the Kellogg Black Oak being
scattered through the forest. Several
new flowering shrubs came in:
Cornus Nuttallii and *pubescens*, No. 660,
and a Blue *Hebeanthus*, No. 647.
There were also acres of the most
beautiful *Linanthus** I ever saw -
for delicacy of color and of marking.
* No. 665

Salmon Co.

Sequoia National Park

Alpinia h. var. (Asch. + Mag.) Jones

No 646. *birdiana* (Pacifica) Edge of
Brooklet in deep shady ravine. Petals
2, median, obcordate (or at least deeply
emarginate). Sepals 2, lateral, whitish.
Petals white, $\frac{2}{3}$ line long, a little
shorter than the sepals.

parvifolia Treb. *

No 647. *Hebeanthus*, Blue Deer Brush
Fls. blue, raceme; in habit, appearance
of fls. etc suggestive of *b. Parryi*.
upper surface of leaves shiny.

membranaceum (Dunbar, ined.)

No. 648. *Allium* ~~*campanulatum*~~ *Nuttallii*
Fls. pink, with deeper pink transverse marking
at base of segments; ovary with apparently 6
somewhat transverse crests or rather horizontal
crests.

- *Cornus Nuttallii*; calyx cupth 4-lobed;
calyx simulating a bit the papery
of some *Campanula*; together for instance.

* my own name.

Marble Fork, June 24, 1900.

I have met three Lupines since coming into the Forest Belt: - first, no. 635, which I shall call the "Dull White Pine-Lupine." ^{cf. no. 714. Agardh.}

- No. 649. *Lupinus latifolius*. This covers large areas of the forest floor and lights up the shadows in the most wonderful way. The entire raceme comes into flower almost at once (not so in #635) and is over or at least 1 ft. long, standing erect, of the most delicate pink or pale blue. I have scarcely seen a more entrancing sight. These showy racemes standing aloft from the mass of leafiness below. Yellow-Pine Lupine.
- No. 650. Blue Pine-Lupine. Upper calyx lip broad, entire; lower lip slender, ^{truncate} not obviously notched; fls blue; yellowish-white spot on banner, aging to purple. Caespitose. Folioles silky. See next p.

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Keel ciliate towards apex with soft short hairs. Stems about 1 to 1 1/4 ft. high from a leafy caespitose (or half-matted) base. cf. 4:26 infra, no. 719. = *L. grayi* Wats.

- Shoes should be hobnailed; some prefer the star-nails; some the small round nails. After the star-nails get worn down they do not hold any better than the round nails and one feels them more readily stepping on rocks, at least if the soles be thin.

- *Idioscandlon bicolor*, coming into flower. *Kelloggia galioides*, in fl.

- No. 651. *Streptanthus orbicularis*?
= *S. tortuosus* Kell. var. *orbiculatus*
River bed, in sand, Marble Fork. Annual.
Petals with purplish-veined tips. Stamens ^{↑ whitish} all free and distinct. A couple of abnormal branchlets in sheet.

Round Meadow, June 24, 1900.

Left Marble Fork about 12:30. The mules fording the river in good shape. I threw a line across the river to Stone who towed them across. The river became quite high on the previous evening 7 to 10; the next morning it was going down and continued to recede as long as we were there. Britten told us it was safe to cross until about 4:00 o'clock. These rivers thus have regular tides caused by the snow melting in the day time.

Monday, June 24.

Spent most of the day fishing in camp. Stone went back to Marble Fork to fish for trout. Not much luck. He caught 24 while we were in camp there and we feasted! But not much luck today. The mules are "in

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closer in a beautiful meadow, the Big Trees all about it. Chipmunks antic about and tree squirrels chase each other round the great trunks. The woodpeckers are a source of entertainment. Their rapping ~~is~~ very loud in the quietness of the vast tree tops. At a distance the raps run into each other and the sound is not unlike the sullen roar of a deer-hound in a distant canon or of a half-suppressed whistle of a train darting in and out of tunnels in the canon. I speak of these animals because they grant companionship in a sense. One cannot easily describe the wonderful stillness of this great forest and its intense loneliness. There is no outlook, except the 100 yards across the meadow, which I think intensifies the feeling.

Round Meadow, June 24, 1900.

The Sequoias here of every age and size from little seedling, 4 ft. high to Old Men's wasted by the storms of the centuries and untold fires. It is not easy to describe the feelings generated by the Sequoia columns. These great columns that hold their growth so remarkably to the very top. It is told of Kellogg, the gentle man and Christian who happened also to be California's pioneer Botanist, that on seeing the Big Trees of the Sierras for the first time he approached them reverently with tears streaming down his face. When we came into the Giant Forest my companion a typical college youth gazed at them steadily for a long while as we passed several; then he said abruptly " Gee Whiz. What a time a fellow would

Sequoia National Park.

have trying to shin up one of these! Such are the different feelings generated. But as I look at these great fluted columns with the superb coloring of the bark, and the fine crowns of these titans in their prime I cannot but exclaim: How beautiful must have been the Mesozoic forests where these trees fraternized with other Sequoia species, with prehistoric taxoids and the Ginkgos with their fern-like leaves!

About the meadow at one end is a fringe of Aspen trees ²⁵⁺ 50 ft high. Although the forest is wonderfully quiet these trees are often in a perfect gale, their petioles being compressed vertically the slightest motion disturbs them greatly. I do not like the name "Dancing Asp"; it suggests fear. But these dancing leaves are all intensely joyous, wonderfully glad; keeping and crying: "Let's all go a-maying. Light & sunshine."

Giant Forest, Round Meadow

Measurements of trees of *Equisetum giganteum* within 100 yards of Round Meadow. Mostly at 10 ft.

No. 1 - 47 ft. 10 in. - at 11 ft

No. 2 - 8 " 5 " - " 5 "

No. 3 - 15 " 11 " - " 6 1/2 "

No. 4 - 15 " 10 " - " 8 1/2 "

No. 5 - 10 " 8 " - 7 "

No. 6 - 18 " 3 " - 8 "

No. 7 - 39 - 6 " - 10 1/2 "

("The Pt. Equan") - Ten ft high

up would not measure more

than 28 or 30 ft.) At very

base measures 62 ft.

No. 8 - 17 ft - 7 in - at 10 ft

No. 9 - 28 " - 7 " - at 12 ft

No. 10 - 34 " - 3 " - " 12 "

No. 11 - 13 " - 6 " - " 6 "

No. 12 - 18 " - " - " 7 "

1900.

No. - Triplets

No. 13 - 40 ft. 7 in - at 12 ft.

No. 14 - 42 ft. 9 in - at 12 ft

No. - Twins

No. 15 - 16 ft 8 in - at 9 ft

No. 15 - 30 " 5 " - at ground.

No. 16 - 35 " - - at 12 ft.

No. 17 - 15 " - 6 in - at 12 ft

about 25 ft at ground.

No. 18 - 11 " - 7 - at 6 1/2 ft.

No. 19 - 9 " - - at 6 1/4 "

No. 20 - 11 " - 4 " at 6 1/4 "

No. 21 - 20 " - 11 " at 11 ft.

No. 22 - 16 " - 8 1/2 " 7 ft

No. 23 - 20 " - 9 " 7 1/2 "

No. 24 - 18 " - 4 " 7 "

No. 25 - 20 " - 10 " 7 "

No. 26 - 55 " - 5 " 11 "

No. 27 - 18 " - 3 " 7 "

No. 28 - 34 " - 4 " 10 "

Round Meadow, June 24.

No 29 - Originally about 60 ft.
badly burned on one
side

No. 29 - 53 ft. - 10 ft. on one
side, 15 on the other

No. 30 - 8 ft. - 6 in. - at 7 ft.

No. 30 - 13 " - 8 " " ground

No. 31 - 30 " - 5 " at 12 ft.

No. 31 - 51 " - 7 " at 3 "

No. 32 - 16 " - 4 " at 6 "

No. 33 - 4 " - 1 " at 5 "

No. 34 - 3 " - 11 " at 5 "

No. 35 - 2 " - 4 " at 5 "

No. 36 - 4 " - at 5 "

No. 37 - 11 " 4 in. at 5 "

No. 38 - 12 " 2 in. at 5 "

No. 39 - 5 " 5 " " "

No. 40 - 9 " - at 4 ft.

No. 41 - 6 " - 9 in. " " "

No. 42 - 4 " - 8 " - 4 " "

1900.

No. 43 - 10 ft. - 6 in. - at 4 ft.

No. 44 - 7 ft. - 7 in. - at 5 "

No. 45 - 12 ft. - at 6 "

No. 46 - 5 ft. - 10 in. - at 6 "

No. 47 - 2 ft. - 10 in. - at 4 "

No. 48 - 4 ft. - 8 in. - " "

No. 49 - 5 ft. - 2 in. - at 5 ft.

No. 50 - 12 ft. - 1 in. - at 6 ft.

No. 51 - 23 ft. - 7 in. - at 10 ft.

No. 52 - 9 ft. - 11 in. - at 5 ft.

No. 53 - 20 ft. - at 14 ft.

- 29 ft. - at 4 ft.

No. 54 - 30 ft. - 5 in. - at 10 ft.

on one side, 13 on other

No. 55 - 32 ft. - 5 in. - at 9 ft.

No. 56 - 47 ft. - 3 in. - at 12 ft.

No. 57 - 8 ft. - 5 in. - at 4 ft.

No. 58 - 28 ft. - 9 in. - at 5 ft.

No. 59 - 29 ft. - 9 in. - at 8 ft.

No. 60 - 50 ft. - 6 in. - at 11 ft.

Round Meadow.

- No 61 - 51 ft - 10 in - at 11 ft.
 66 ft - - at ground
- No. 62 - 25 ft - 8 in - at 6½ ft
- No. 62 - 28 ft - 8 in - at 7 ft.
- No. 63 - 35 ft - 1 in - at 5 ft
- No. 64 - 21 ft - 7 in - at 6 ft.
- No. 65 - 24 ft - 2 in - 7 ft
- No. 66 - 25 ft - 7 in - 6 ft.
- No. 67 - 25 ft - 6 in - 8 ft.
- No. 68 - 15 ft - 1 in - 7 ft
- No. 69 - 26 ft - 9 in - 7 ft
- No. 70 - 41 ft - 5 in - 10 ft.
- No 71 - 45 ft - 1 in - 10 ft
 - 67 ft - 6 in - at ground
- No 72 - 37 ft - 9 in - 9 ft.
 badly burned on one side
- No 73 - 36 ft - 10 in - 10 ft.
- No 74 - 40 ft - 8 in - 10 ft.
- No. 75 - 38 ft - 6 in - 10½ ft
 53 ft - 7 in - at ground

1900.

- No. 76 - 46 ft - 7 in - at 8 ft.
 At ground not a great deal larger. The last three are in a row on ridge nearly side of meadow.
- No. 77 - 12 ft - 5 in - at 5 ft
- No. 78 - 8 ft - 4 in - at 4 ft.
- No. 79 - 18 ft - 8 in - at 5 ft.
- No. 80 - 48 ft - - at 9 ft
 somewhat turned on one side.
- No. 81 - 37 ft - at 10 ft
- No. 82 - 34 ft - 6 in one side
 + 12 on other.
- No. 83 - 12 ft - 5 in - at 6 ft.
- No. 84 - 18 ft - 9 in - at 6 ft.
- No. 85 - 46 ft - 7 in - at 9 ft
 Only slightly larger at ground or 10 ft. higher.
- No. 86 - 38 ft - 2 in - at 10 ft.
 53 ft - 6 in - at ground

Round Meadow.

- No. 87 - 40 ft. - 10 in. - at 10 ft.
 No. 88 - 51 ft. - 1 in. - at 9 ft. *Tree marked "P.R.O."*
 No. 89 - 27 ft. - 4 in. - at 1 ft. *Tree marked "The Parker"*
 35 ft. - 9 in. - at 2 ft.
 No. - ~~Twins~~ *somehow burned on no side*
 No. 90 - 52 ft. - 7 in. - at 10 ft.
 No. 91 - 57 ft. - 11 in. - at 11 ft.
 "Corridor Tree" burned on
 No. 92 - 23 ft. - at 6 ft. *2 sides*
 No. 93 - 21 ft. - 8 in. - at 7 ft. *1 side*
 No. 94 - 17 ft. - 6 in. - at 5 ft. *1 side*
 No. 95 - 8 ft. - 5 in. - at 5 ft. *1 side*
 No. 96 - 44 ft. - 2 in. - at 10 ft.
 Burned on no side - "Poles & Leg" for
 No. 97 - 43 ft. - 1 in. - at 10 ft.
 Tree marked "97". Dr. Behn
 No. 98 - 50 ft. - 3 in. - at 10 ft.
 Tree marked "98" on hollow
 No. 99 - 50 ft. - 8 in. - at 11 ft.
 No. 100 - 46 ft. - 10 in. - at 10 ft.

1900.

- No. 101 - 21 ft. - 8 in. - at 7 ft.
 No. 102 - 15 ft. - 9 in. - at 11 ft.
 30 ft. - at ground
 No. 103 - 28 ft. - at 5 1/2 ft. - "103"
 No. 104 - 26 ft. - 6 in. - at 5 ft.
 No. 105 - 23 ft. - at 7 ft.
 No. 106 - 27 ft. - 10 in. - at 10 ft.
 No. 107 - 23 ft. - at 9 ft.
 No. 108 - 33 ft. - 7 in. - at 7 ft.
 fine tree - 25. cor. m. "108"
 No. 109 - 33 ft. - 10 in. - at 10 ft.
 Swale at southern end of n. starting
 No. 110 - 35 ft. - at 11 ft. *back*
 43 ft. - 9 in. - at base.
 No. 111 - 24 ft. - 1 in. - at 8 ft.
 No. 112 - 11 ft. - 4 in. - at 5 ft.
 No. 113 - 21 ft. - 9 in. - at 6 ft.
 No. 114 - 24 ft. - 9 in. - at 10 ft.
 35 ft. - 7 in. - at ground
 No. 115 - 18 ft. - 5 in. - at 10 ft.

Round Meadow.

- No. 116 - 20 ft - 10 in - at 10 ft.
 No. 117 - 24 ft - 1 in - at 10 ft.
 ↳ Two with their bases together.
 No. 118 - 15 ft. - 4 in - at 5 ½ ft.
 No. 119 - 14 ft - 5 in - at 6 ft.
 No. 120 - 21 ft. - 2 in - at 7 ft.
 No. 121 - 21 ft - 3 in - at 8 ft.
 No. 122 - 9 ft - 10 in - at 4 ½ ft.
 No. 123 - 4 ft - 6 in - at 4 ft.
 No. 124 - 19 ft - at 8 ft.
 No. 125 - 12 ft - 2 in - at 7 ft.
 No. 126 - 6 ft - 4 in - at 6 ft.
 No. 127 - 14 ft - 6 in - at 4 ft.
 No. 128 - 20 ft - 1 in - at 10 ft.
 The last 2 had their bases together
 Nos 123 to 126 inc. were grown
 together at the base. No. 123
 had the appearance of a sucker
 tree in the Coast Redwood.
 No 129 - 18 ft. - 5 in - at 10 ft.

1900.

- No. 130 - 6 ft. - 11 in - at 5 ft.
 No. 131 - 9 ft. - 3 in - at 5 ft.
 No. 132 - 5 ft. - 1 in - at 5 ft.
 No. 133 - 5 ft. - 5 in - at 11 ft.
 No. 134 - 5 ft. - 7 ½ in at ground. "Uncle Sam"
 No. 135 - 48 ft. - at 10 ft. - great trees
 cut base
 No. 135 - 60 ft. - 6 in at ground. "Berkeley"
 No. 136 - 52 ft. - 4 in - at 11 ft.
 No. 137 - 24 ft. - 1 in - at 6 ½ ft.
 No. 138 - 48 ft. - 2 in - at 10 ft.
 No. 139 - 40 ft. - 8 in - at 10 ft.
 No. 140 - 54 ft. - 8 in - at 12 ft.
 No. 141 - 36 ft. - 7 in - at 8 ft.
 No. 142 - 4 ft. - 2 in - at 4 ft.
 No. 143 - 42 ft. - 3 in - at 7 ft. ^{badly} _{ruined}
 No. 144 - 38 ft. - 3 in - at 9 ft.
 No. 145 - 33 ft. - 1 in - at 15 ft.
 No. - Twins.
 No. 146 - 20 ft. - at 7 ½ ft.
 No. 147 - 42 ft. - 8 in - at 8 ft.

Round Meadow.

- No. 148 - 14 ft. - 9 in. - at 5 ft.
 No. 149 - 13 ft. - 7 in. - at 5 ft.
 No. 150 - 9 ft. - at 5 ft.
 No. 151 - 7 ft. - 9 in. - at 4 ft.
 No. 152 - 5 ft. - 7 in. - at 4 ft.
 No. 153 - 49 ft. - 4 in. - at 10 ft.
 No. 154 - 46 ft. - 4 in. - at 10 ft.
 No. 155 - 48 ft. - at 10 ft.
 No. 156 - 33 ft. - 9 in. - at 10 ft.
 No. 157 - 46 ft. - 10 in. - at 10 ft.

(On side hill near dead tree)

- No. 158 - 18 ft. - 6 in. - at 8 ft.
 No. 159 - 17 ft. - at 8 ft.
 No. 160 - 16 ft. - 4 in. - 8 ft.
 No. 161 - 25 ft. - 5 in. - 8 ft.
 No. 162 - 23 ft. - 8 ft.

(Three three in a cluster
at Round Meadow Camp.)

- No. 163 - 17 ft. 6 in. - at 9 ft. ^{42 in.}
 No. 164 - 28 ft. 11 in. - at 10 ft. ^{46 in.}

1900.

Near the northerly end of the meadow is a small grove of Sequoia "seedlings" 4 to 15 ft. high; there are some others 3 ft high or more scattered here and there. As a rule the very largest trees hold their girth extremely well; very much smaller trees frequently have very tapering and very large bases so that a measurement taken relatively lower down (as compared with a big tree) would indicate too large a tree. The measurements were taken at such a point as would seem to indicate best the size of the tree from the standpoint of the trunk sustaining girth upward.

Round Meadow - Sequoia.

Many young trees and some old and ^{many} nearly all - large ones have fine crowns and are beautifully symmetrical. Most of the very largest trees have the "typical" jagged or ragged crown, the terminal branch or branches dead and short stumpy limbs massed with foliage scattered along the top of the column. The tops of these trees, even of those with regular unbroken ^{many} crowns, suggest trees living near the ocean and battling against the storms of the sea. The great flutings of the bark usually run longitudinally on the trunk but I have noted them as spirals.

Round Meadow. 1900.

The Sequoias are baffling as to height. I judge that the highest here are 150 to 175 ft. h. I have not seen any that I should say were 200 ft. high but I may be deceived in the height. They are not only on the most hill-tops but on rocky places everywhere on this plateau from here to Moro Rock. In the forest generally they run from 6 or 7 to a 100 sq. yds to only 1, 2, or 3. Seedling trees, 2 ft. high or so can be found here and there.

- Squirrels collecting cones of *Sequoia gigantea*. See vol. 5, p. 140, seq.

Round Meadow.

Chinquapin.

Hazel:- Stone notes "the leaves are softer than in the Berkeley plant" (*Corylus rostrata*)

Cases of teratology are common:

Gilia aggregata; 4-merous corolla
Stellaria Jamesii? - " " "

Silene incompacta (?) no. 629; seems to be here also: No! diff. See No. 706.

- *Lotus crassifolius*, heads of flowers on their peduncles always turned downward or toward the ground!
 Cf. no. 627. - no. 13, 284. f. vol 48.

- *Cynoglossum occidentale* Gray.
 Cont. from p. 200, no. 657. Det. W. L. J.

1900.

The sound of great and small branches falling, often ^{times} making sharp reports, punctuates the stillness of the forest. Sometimes the sound is not greatly unlike a rifle or gun shot. A branch falling from the top of a tall fir or redwood takes a decided amount of time in which to reach the ground. There it goes! Now there! Speaking its downward progress we have abundant time in which to speak to your camp companion and direct his attention to it!

- *Phacelia purpurea* Bdg. no. 661. See p. 200. My notes meant this, I think: the lucid spots in corolla-tube set off as it were 5 alternating "claws" with pairs of scales in front of each "claw", the scales so meeting in pairs to form a tube.

No. 652. *Collinsia* ^{= *Microsteris*} (*Gilia gracilis* Hook.)

Corolla bluish-white, its lobes emarg.
Stream bed, Marble Fork.

No. 653. *Scutellaria* ^{*siphocampyloides*} ~~*argusifolia* Pursh~~

Springy place in road, Cedar Creek to
old Colony mill. *Eulophus bolanderi*

No. 654. Umbellifer with the stem ^{C. & R.}
from a pair of fleshy roots and
white fls. Rhiz. 7 lines thick at widest
part. Cedar Creek to Old Col. Mill.

No. 655. *Balsamorhiza* (?) ^{*inermis*}
(*greenei*).

2 ft. tall; no rays! Col. Mill to M. Fork

No. 656. *Laricula* - Col. Mill to M. Fork
^{*S. septentrionalis* Greene.}

No. 657. *Echinosperrum* - " " - ^{*S. septentrionalis* Greene.}

No. 658. *Mimulus* ^{*laciniatus* Gray. det. A. S. G.} - Marble Fork bed.

No. 659. *Balyktridium* ^{*Spraguei*} - Bed of
Marble Fork. *umbellatum*

No. 660. *Cornus pubescens*, 9 to 12 ft. h.
near Marble Fork.

= *C. californica* C. A. Mey. var. *pubescens* Mch.

No. 661. *Phacelia purpusii* Bdg.
(See 4:19 infra.) (See p. 207.)

Petals as if distinct, with the claw of
each infolded to form a tube (the scales
narrow and meeting from top to bottom) and
the spaces between the claws lined spots.
Corolla very pale or sordid blue.

Synoglossum occidentale Gray

